

Description

The C365 wireless thermostat controls the heating and cooling system the same as most programmable thermostats. It also controls the airflow to the upstairs and downstairs using an upstairs and a downstairs wireless, modulating damper. A wireless, battery powered 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, Heating only, Cooling only, Automatic Heating or Cooling.

Fan Modes

Continuous or Automatic fan operation.

Thermostat Modes

Hold, Schedule or Vacant mode.

Programs per Day

Morning, Daytime, Evening and Night.

Program Format

Weekdays and weekend- 5/2.

Temperature Override

Up/down keys adjust the setpoint temperature. Temperature setting is held for 4 hours when adjusted in Schedule mode.

Airflow Modes

Automatic or Manual when Manual mode is enabled.

Airflow Override

Up/down keys adjust the upstairs/downstairs airflow. Airflow setting is held for 4 hours when adjusted in Automatic mode.

Airflow Limits

Maximum upstairs and downstairs, heating and cooling airflow limits are set during installation.

Nighttime Operation

Option used when bedrooms are located upstairs. C365 uses the upstairs temperature sensor to control heating and cooling calls and directs more airflow upstairs.

Compatible HVAC Equipment

Gas/electric equipment with 2-stage heating and single stage cooling and heat pumps with single stage compressor and single stage auxiliary heating.

Upstairs Temperature Sensor

One or two Model TS5-WL upstairs wireless temperature sensors can be used.

Modulating Dampers

Round or rectangular dampers using the A80WL2 actuator and up to 1 inch static pressure.

Power

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

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.

Installation Sequence

Detailed directions for each step follow Installation Sequence.

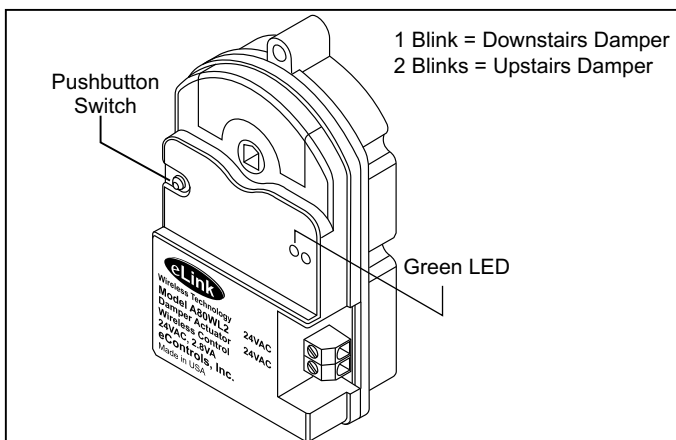
- 1) Setting Dampers as Upstairs or Downstairs**
Apply 24VAC to the dampers and set them as the Upstairs or Downstairs damper.
- 2) Wiring Dampers**
Wire the 24VAC terminals on the dampers to R and C at the equipment.
- 3) Installing C365 Thermostat Subbase**
Remove the existing thermostat and install the C365 subbase.
- 4) Wiring the C365 Subbase**
Using the existing thermostat cable connect the subbase to the equipment.
- 5) Installing C365 Batteries**
Install two AA batteries in the C365 thermostat.
- 6) Installing the Upstairs Temperature Sensor**
Install one or two upstairs temperature sensors.
- 7) Setting Temperature Sensors as #1 or #2**
Set the sensor as #1 or #2
- 8) Selecting a Different Home Address**
When two or more wireless Comfort365 systems are installed within 300-feet of each other, different home addresses can be used to prevent adjacent systems from interfering with each other.

Selecting Installer Options

Use the Comfort365 to select equipment and options.

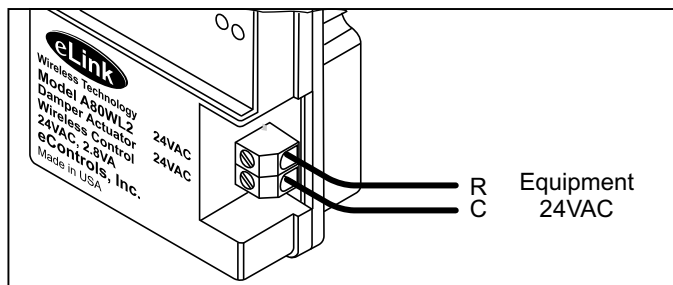
1) Setting Damper as Upstairs or Downstairs

The small pushbutton switch on the damper actuator is used to set the wireless damper actuator as the Upstairs or Downstairs damper. With 24VAC power applied to the actuator, press and hold the switch until the green LED blinks once or twice. Release the switch after one blink to set the damper as the downstairs damper or release the switch after two blinks to set the damper as the upstairs damper. If more than one damper is required to define the upstairs or downstairs area, follow the above instructions to set the additional dampers as Upstairs or Downstairs dampers.



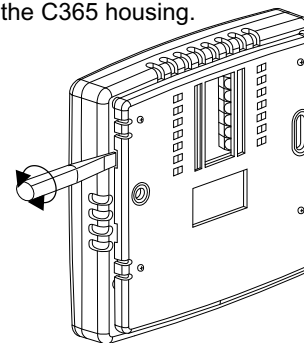
2) Wiring Dampers

The two terminals on the damper actuators are wired to the R and C terminal at the equipment to power the dampers.

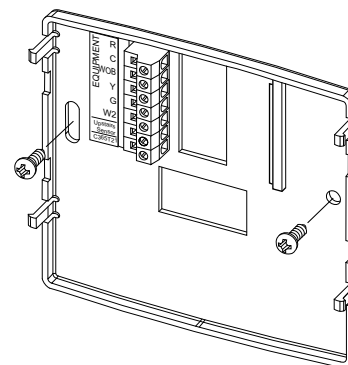


3) Installing C365 Thermostat Subbase

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



Attach the subbase using the screws and wall anchors supplied. The wires to the HVAC equipment pass through the opening between the terminals.



4) Wiring C365 Subbase

Warning!

Turn the power to the HVAC equipment off before wiring.

The subbase is connected to the equipment using the existing thermostat cable or a new cable if the replacement equipment requires more wires.

C365W21 Set for Gas/Electric Equipment

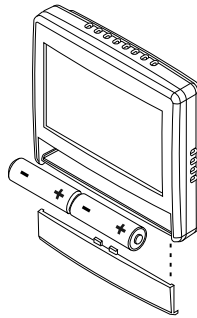
C365W21 Terminal	Equipment Terminal	Function
R	R, Rc, Rh	24VAC Power
C	C	Common
W/OB	W, W1	Stage1 Heating
Y	Y, Y1	Cooling
G	G	Fan
W2/E	W2	Stage2 Heating

C365W21 Set for Heat Pump, O Valve

C365W21 Terminal	Equipment Terminal	Function
R	R, Rc, Rh	24VAC Power
C	C	Common
W/OB	O	Reversing Valve
Y	Y, Y1	Compressor
G	G	Fan
W2/E	W2/E	Auxilliary Heating

5) Installing C365 Batteries

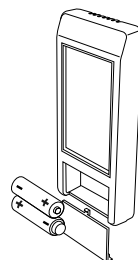
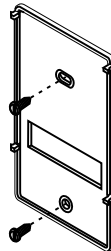
The C365 uses two AA batteries for backup. Slide the battery door downward to access the battery compartment. Install two AA batteries as shown below. Re-install the door.



6) Installing Upstairs Temperature Sensors

The TS5WL is wireless and powered by two AA batteries. Two upstairs temperature sensors can be used and the temperatures are averaged. for a single sensor installation, install the sensor on an interior wall about 4-feet above the floor and in a location that best senses the upstairs temperature.

For a dual sensor installation, install the sensors in locations that will best sense the average upstairs temperature. Mount the TS5WL subbase using the screws provided.



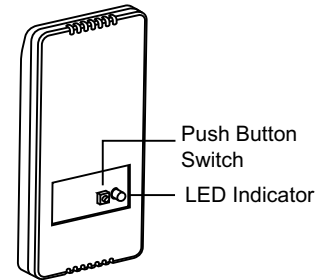
Install two AA batteries as shown.

7) Setting Temperature Sensors as #1 or #2

The TS5WL is factory set as #1 wireless temperature sensor. If two upstairs temperature sensors are used, set the address number on the second sensor to #2. The sensor location needs to be documented for future reference. Use the removable labels included with the thermostat to identify the sensors as #1 or #2. Place the labels on the front of the thermostat over the battery cover.

Press the push button and the LED will blink once, then twice and repeat this pattern. To set the sensor as the #1 sensor, release the push button switch after one blink or after two blinks to set it as #2 sensor. After releasing the push button, the LED will blink yellow once to indicate successful communication or blink red indicating that communication was not successful.

1 Blink = #1 Sensor
2 Blinks = #2 Sensor



8) Selecting a Different Home Number

When two or more wireless Comfort365 installations are within 300-feet of each other, the C365 thermostat, dampers and upstairs temperature sensors must be set to different Home numbers so they do not interfere with one another.

Comfort365 Thermostat

Use Installer Option 26 to set a new Home number.

Upstairs and Downstairs Dampers

Turn the power off to the damper actuator. While pressing the push button switch on the actuator, turn the power on. The red LED will blink once, then two rapid blinks, then three rapid blinks and so on. Release the switch after the number of blinks corresponding to the Home number to be set. Changing the Home number does not affect the assignment as an Upstairs or Downstairs damper.

Upstairs Wireless Temperature Sensors

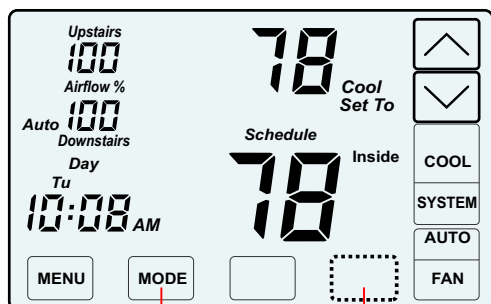
Remove one of the batteries to remove power to the sensor. While pressing the push button switch on the sensor, re-install the battery. The LED will blink red once, then two rapid blinks, then three rapid blinks and so on. Release the switch after the number of blinks corresponding to the Home number to be set. Changing the Home number does not affect the assignment as the #1 or #2 sensor.

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	1
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 Differential Mode0 0.5° On/Off Span Differential Mode1 1.0° On/Off Span Differential Mode2 1.5° On/Off Span	O O °	0, 1 or 2	1
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 minutes
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 minutes
20	Maximum Upstairs Airflow in Heating.	HAF+Heat	100 to 160%	150%
21	Maximum Upstairs Airflow in Cooling.	CAF+Cool	100 to 160%	140%
22	Maximum Downstairs Airflow in Heating.	HAF+Heat	100 to 160%	150%
23	Maximum Downstairs Airflow in Cooling.	CAF+Cool	100 to 160%	140%
24	Maximum Temperature Difference Between Upstairs and Downstairs.	diF	0 to 10	2
25	Number of Wireless Sensors Used	Snr	1 or 2	1
26	Home Number	Home	1 to 8	1
27	Factory Restore	Fr	No(Down) or Yes(Up)	No

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.



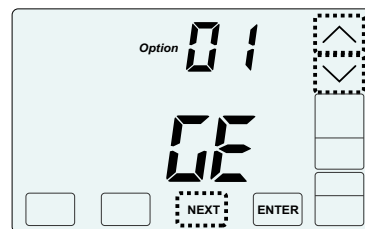
01 Selecting the Equipment Type

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**.



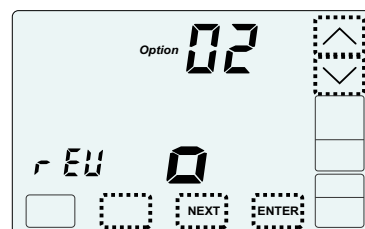
02 Reversing Valve *(Only displayed if HP selected)*

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**.



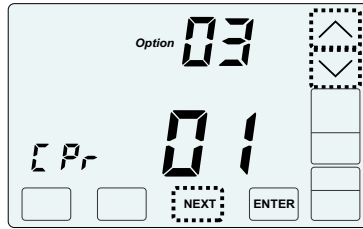
03 Setting the Compressor Stages

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** to display the next option. After about 20 seconds, the installer options will time out and return to normal thermostat operation.

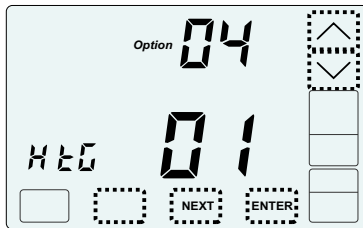


04 Setting the Heating Stages

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

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

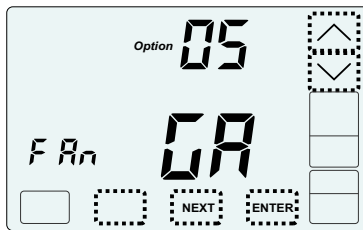
Touch **NEXT** or **ENTER**.



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.



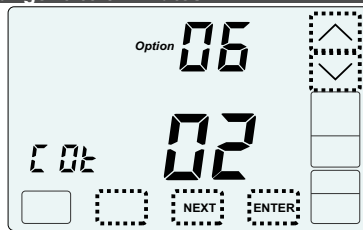
Touch **NEXT** or **ENTER**.

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** to display the next option, or **ENTER** to save the option and return to normal thermostat operation.

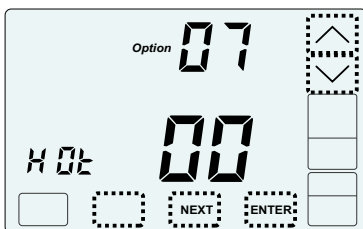


07 Heating Minimum Off Time

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**.

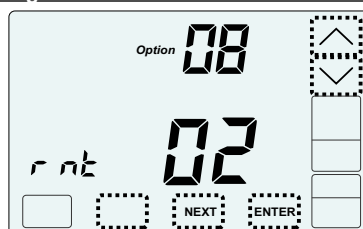


08 Minimum Run Time

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**.



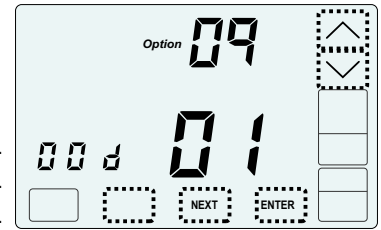
09 Setting On-Off Temp Differential

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.



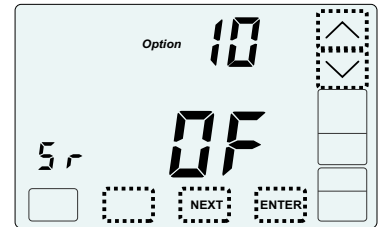
10 Smart Recovery

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**.

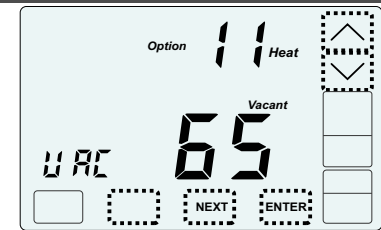


11 Vacant Heating Setpoint

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**.

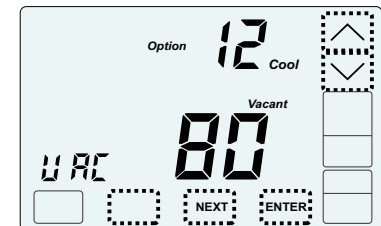


12 Vacant Cooling Setpoint

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**.

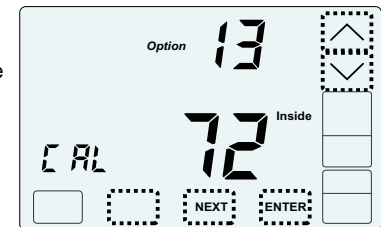


13 Calibrate Downstairs Temperature Sensor

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**.

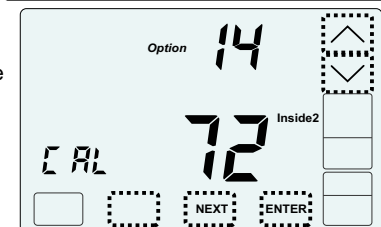


14 Calibrate Upstairs Temperature Sensor

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**.



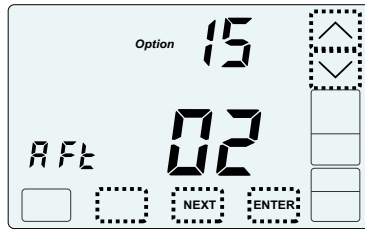
- ❗ The **NEXT** key is used to display the next option.
- ❗ The **ENTER** key is used to save options and return to normal thermostat operation.
- ❗ The hidden **BACK** key is used to return to previous options and is located to the left of the **NEXT** key.

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.



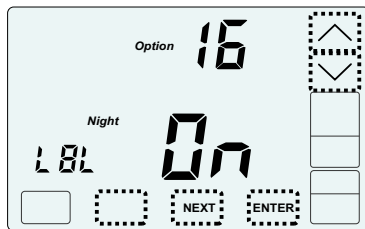
Touch **NEXT** or **ENTER**.

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.



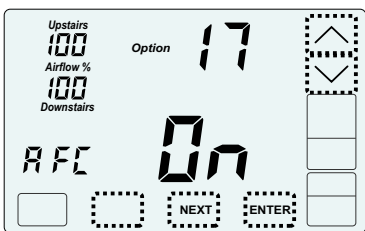
Touch **NEXT** or **ENTER**.

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.



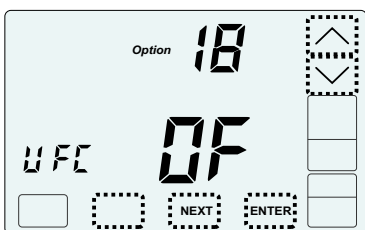
Touch **NEXT** or **ENTER**.

18 Enable Selecting Manual Airflow Control

Factory Default: Off. Range: On or Off.

This option enables the user to select manual airflow control. If off, the user won't be able to select Manual Airflow Control in the User Manual.

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.



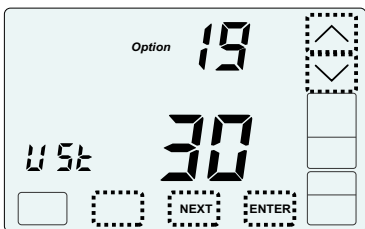
Touch **NEXT** or **ENTER**.

19 Up Stage Time

Factory Default: 30 minutes Range: 5 to 180 minutes

Maximum continuous stage1 call time before upstaging to stage2 .

Touch the **UP/DOWN** keys to select the maximum call time for upstaging.



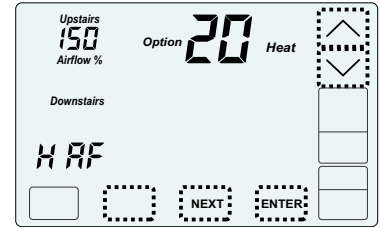
Touch **NEXT** or **ENTER**.

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.

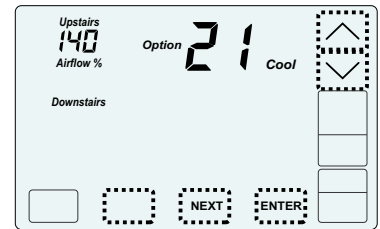


Touch **NEXT** or **ENTER**.

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.

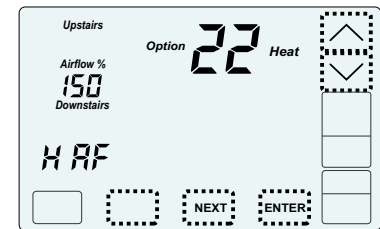


Touch **NEXT** or **ENTER**.

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.

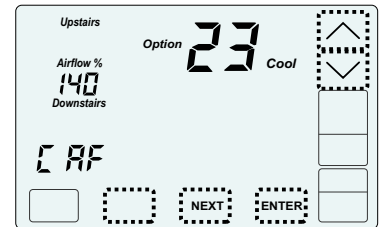


Touch **NEXT** or **ENTER**.

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.



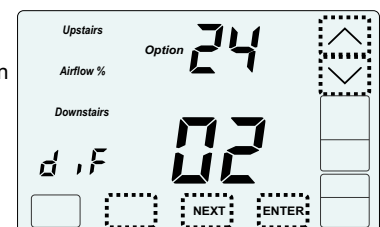
Touch **NEXT** or **ENTER**.

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**.

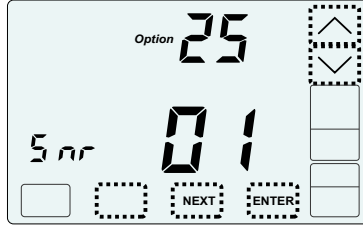
25 Setting the Number of Wireless Sensors

Factory Default: 1. Range: 1 or 2

Select whether 1 or 2 wireless upstairs sensors are used.

Touch the **UP/DOWN** keys to select the number of sensors.

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

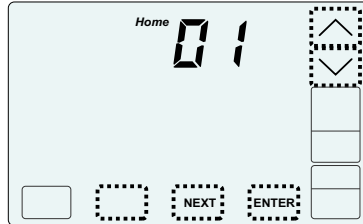


26 Setting a New Home Number

Factory Default: 01 Range: 01 to 08

Touch the **UP/DOWN** keys to select a new Home number.

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

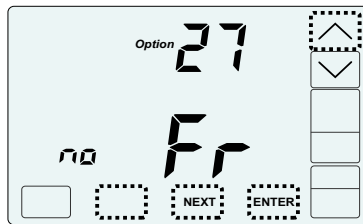


27 Factory Restore

WARNING! Factory Restore resets ALL settings.

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

To restore factory settings, touch the **UP** key to display **YES** then touch **ENTER**. The thermostat will restore factory settings and return to normal operation.

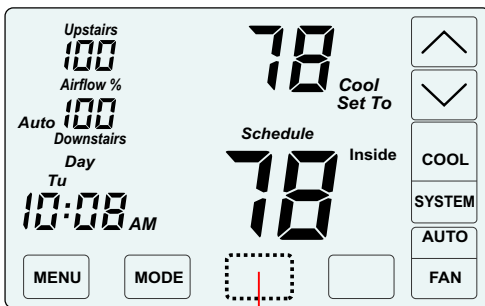


ACCESSING THE TEST MENU

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.

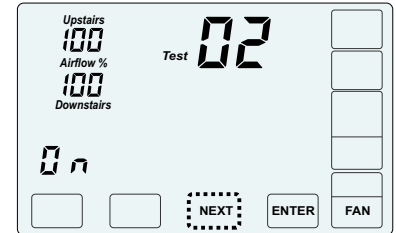
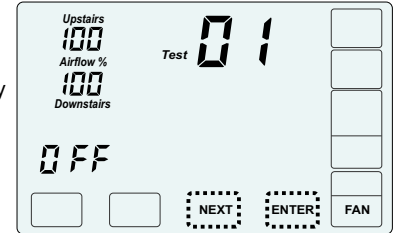
01-02 Testing Indoor Fan Operation

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.



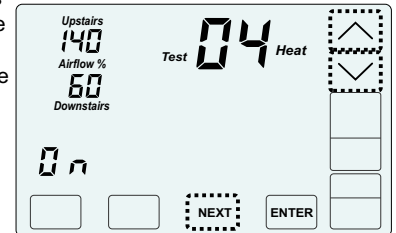
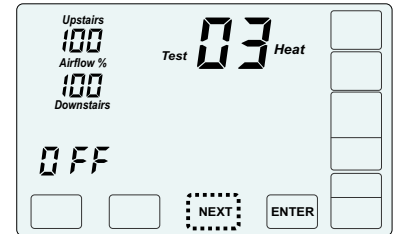
03-04 Testing Heating Airflow Limits

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.

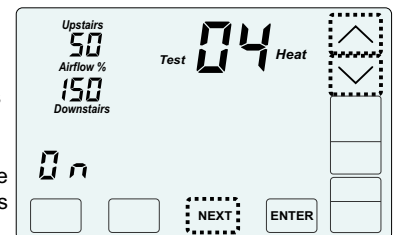
To determine the maximum allowable upstairs airflow, touch the **UP** key until the airflow is too great and causes noise or annoyance. Lower the airflow using the **DOWN** key until it is acceptable. This is the maximum allowable upstairs airflow in heating. Record the airflow value.



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

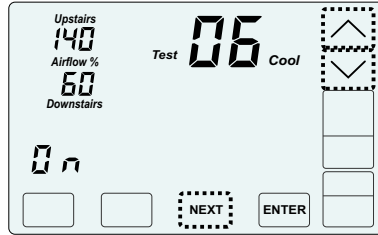
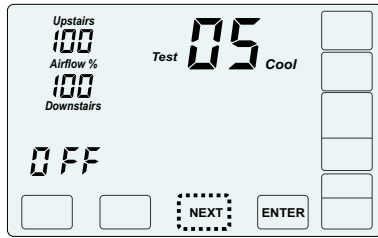
This test is used to determine the maximum allowable upstairs airflow and maximum allowable downstairs airflow in COOLING.

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.

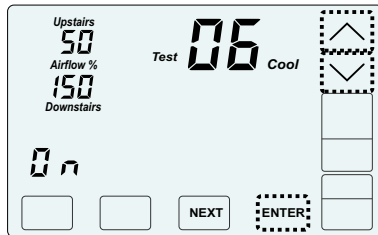
Touch **NEXT** to go to Option 6 to activate cooling. Verify the equipment is operating.

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.



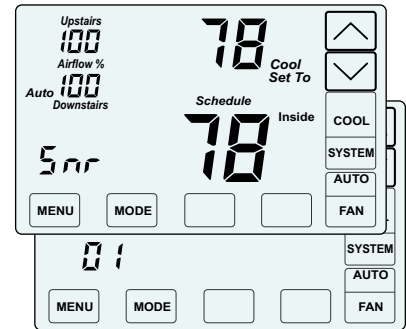
Maximum Allowable Downstairs Airflow in cooling

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.

Error Messages

If the C365 detects a communication error with the wireless Upstairs temperature sensor or sensors, a blinking message appears where the time is normally displayed. The display will alternately show Snr and the sensor number where time is normally displayed.



Check that the batteries are installed correctly or replace them if they are old. To test communication, reset the sensor number using the pushbutton switch on the back of the sensor. When the switch is released the LED will blink yellow indicating a successful communication or blink red if the communication was not successful.

Damper LED Indicators

The dampers have a red and a green LED indicator that indicate the position and status of the damper.

Green LED On Continuously

The damper is in the fully open position.

Green and Red LEDs Alternately Blinking

The damper is in a modulated position between fully open and closed.

Green LED On and Red LED Blinking

The damper has lost communication with the C365 Thermostat and gone to the fully open position until communication is restored.