smartlabs®

On-Line Owner's Manual Containing Cautionary FCC & IC Statements

September 30, 2011

Wall-Mounted Wireless Thermostat
Models: 2441T and 2441TH
FCC ID: SBP2441T IC: 5202A-2441T

The owner's manual below may be accessed freely via the Internet with any web browser and supports the PDF format.
http://www.smarthome.com/2441TH.html

Certification and Warranty

FCC & Industry Canada Compliance Statement

This device complies with FCC Rules Part 15 and Industry Canada RSS-210 (Issue 8). Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorise aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radiolectrique subi, mme si le brouillage est susceptible d'en compromettre le fonctionnement.

The digital circuitry of this device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna of the device experiencing the interference
- Increase the distance between this device and the receiver
- Connect the device to an AC outlet on a circuit different from the one that supplies power to the receiver
- Consult the dealer or an experienced radio/TV technician

WARNING: Changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

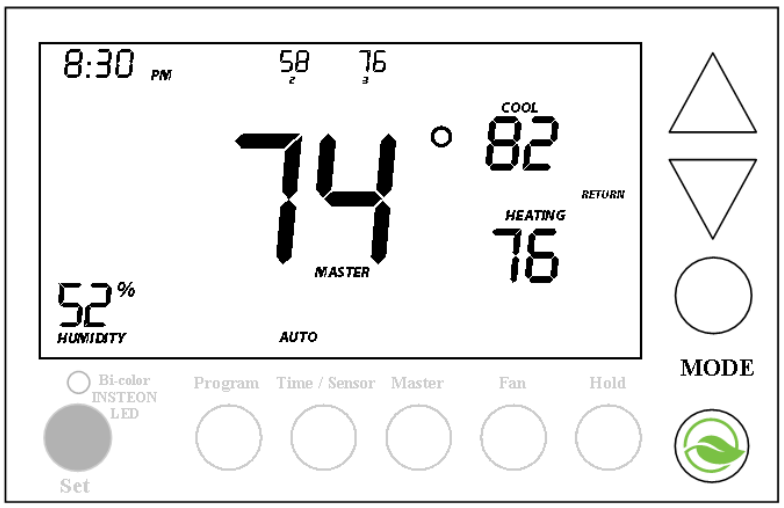
Complies with Section 5 of FCC document *784748 D01 Labeling Part 15 18 Guidelines v07* where cautionary statements in the user manual may be provided over the Internet.

TempLinc™

Owners Manual

INSTEON® Thermostat (#**2441T**)

Thermostat Sample



The gray buttons are under the front door of thermostat

INSTEON

SMARTHOME™

About TempLinc **3**

TempLinc – Features & Benefits **3**
What's in the box? 3

Thermostat Button Overview **4**

Thermostat Operation and Programming **5**
Thermostat Mode Button Operation 5
Thermostat Energy Button Operation 6
Thermostat Set Button Operation 7
Thermostat Time / Sensor Button Operations 7
Thermostat Program Button Operation 8
Thermostat Fan and Hold Button Operations 10
Thermostat Master Button Operation 11

Installation **12**
Tools Needed 12
Preparation 12
Wire Connections 12
Test Operation 13

Adding a Wireless Thermostat **13**

INSTEON Programming **14**
Linking as a Responder 14
Linking as a Controller 14
Unlinking 16

Factory Setup Modes **17**
Factory Programming Mode 18
Humidity Calibration Mode 20

Factory Reset to Default **20**

Certification and Warranty **22**
FCC & Industry Canada Compliance Statement 22
Limited Warranty 22
Limitations 22

About TempLinc

TempLinc is a 7 day programmable INSTEON-compatible thermostat. It comes in two variants, with and without a humidity sensor. The humidity sensor model also includes 2 stage heating and cooling, while the non-humidity sensor device is a single stage device.

Expand the system by creating extra temperature zones in your home. Simply add wireless TempLinc zone thermostats to your system.

There is one accessory product for the TempLinc, a waterproof sensor that plugs into the TempLinc using bare leads on a 6' cord.

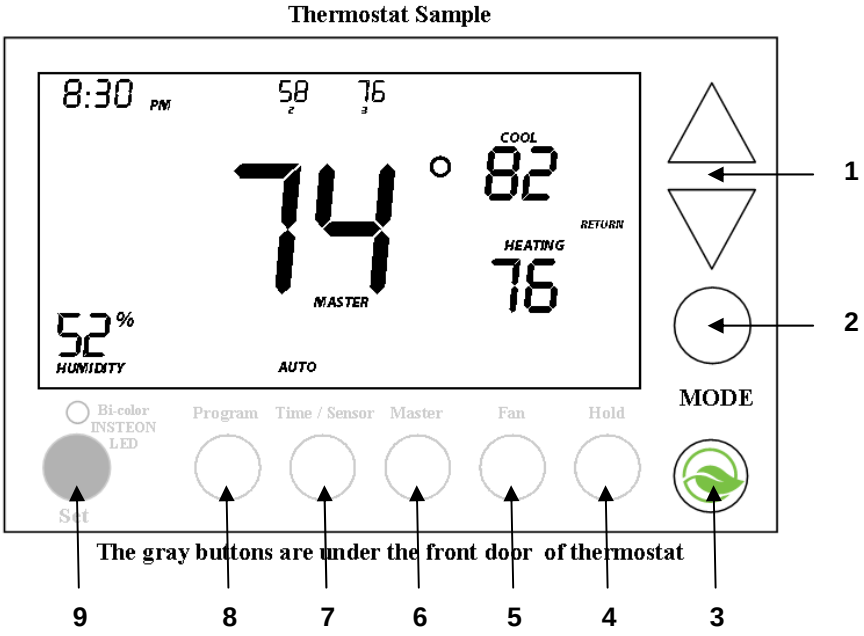
TempLinc – Features & Benefits

- Installs and Links to other INSTEON devices in minutes
- Saves energy and money on bills by remotely controlling and automating your thermostat
- Communicates wirelessly over radio frequency (RF)
- Automatically controls remote INSTEON devices when the thermostat switches A/C, heat, and fan on or off
- Reports changes in thermostat modes, temperature, humidity, setpoints and fan to compatible automation controllers or software
- Fine-tunes thermostat set points by single degrees from any INSTEON controller with specific Bright and Dim buttons
- Stores setup state in memory so settings aren't lost during power outages
- Two-year warranty

What's in the box?

- TempLinc
- 2 mounting screws
- 2 anchors
- Quick-Start Guide

Thermostat Button Overview



1 **Up/Down** adjust the temperature setpoint based on the mode you are currently in

2 **Mode** allows the user to select the current operational mode of the HVAC system. It cycles between Off, Auto, Cool and Heat

3 **Energy** button is designed to be a very quick to use option that saves energy (and money). When you press it, it will back off the set point by a specified value. The default value if 5 degrees from the current setting. To change the default offset value away from 5 degrees, you must use HouseLinc.

4 **Hold** over-rides a pre-programmed mode

5 **Fan** cycles between Auto and Always On

6 **Master** makes the device the master temperature controller

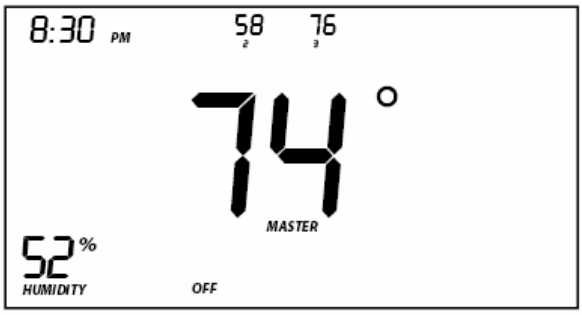
7 **Time / Sensor** button allows you to set the date, time and select the sensors/humidity to display. It cycles between day, time, format, and each sensor option.

8 **Program** button allows you to setup the various pre-programmed modes (Wake, Leave, Return, and Sleep).

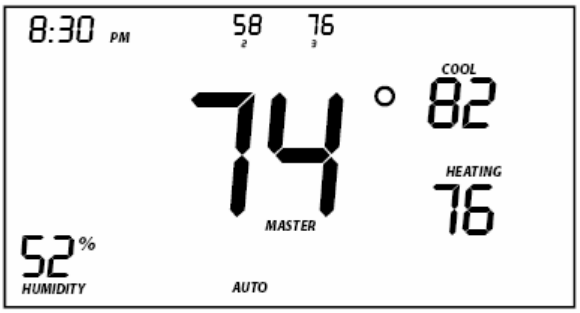
9 **Set** button is for INSTEON linking and unlinking as well as accepting the current programming step and going to the next one in sequence. For INSTEON functions, it works like Set does for other INSTEON devices.

Thermostat Operation and Programming

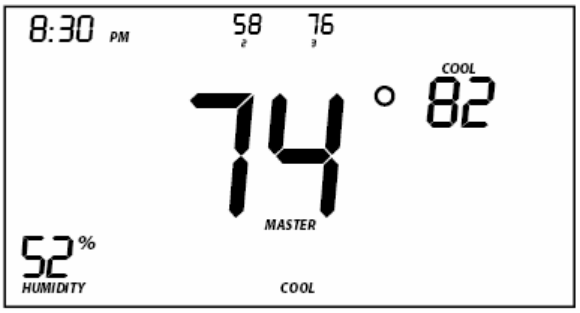
Thermostat Mode Button Operation



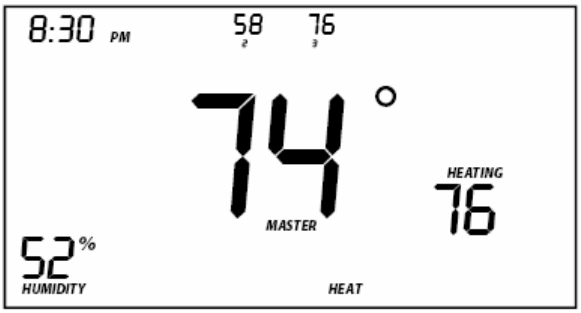
Off Mode:
- No set points are shown
- Up / Down do not do anything



Auto Mode:
- Both cool and heat set points are shown
- Up / Down move both together with a set gap



Cool Mode:
- Only Cool set point is shown
- Up / Down do not do anything

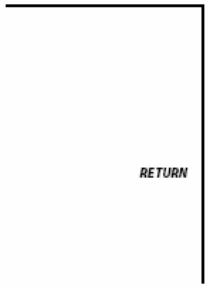


Heat Mode:
- Only Heat set point is shown
- Up / Down changes the Heat set point

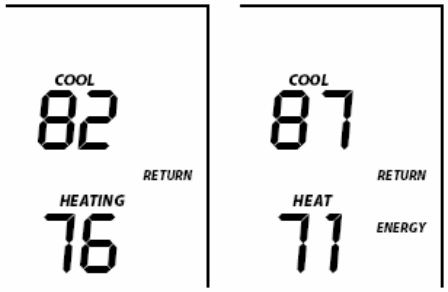
Thermostat Energy Button Operation

The Energy button is designed to be a very quick to use option that saves energy (and money). When you press it, it will back off the set point by a specified value. The default value is 5 degrees from the current setting. To change the default offset value away from 5 degrees, you must use HouseLinc.

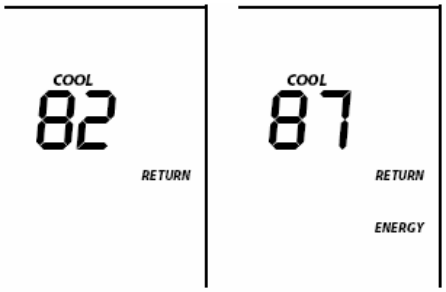
- When you exit Energy mode, it will change back the 5 degrees that were change upon entry
- The unit remains in Energy mode until:
- Energy button is pressed again
- The mode button is pressed
- A pre-programmed mode is activated due to time
- Up / Down adjust the temperature set point based on the mode you are currently in inside Energy.
- No options blink with this button's operations.



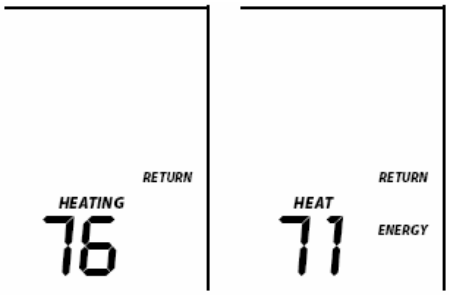
From Off Mode:
- Energy button does nothing because the system is off (at maximum energy savings already)



From Auto Mode:
- Both Heat and cool set points back off as specified
- Default back-off is 5 degrees



From Cool Mode:
- Cool set point backs off as specified
- Default back-off is 5 degrees



From Heat Mode:
- Heat set point backs off as specified
- Default back-off is 5 degrees

When you go into Energy mode, Up and Down buttons are active and the previous pre-programmed mode (Wake, Leave…) will continue to show.

Thermostat Set Button Operation

Set button is for INSTEON linking and unlinking as well as accepting the current programming step and going to the next one in sequence. For INSTEON functions, it works like Set does for other INSTEON devices. Operating details can be found in other sections.

Thermostat Time / Sensor Button Operations

- The Time / Sensor button allows the user to set the date, time and select the sensors/humidity to display. It cycles between day, time, format, and each sensor option.
- Up/Down arrows cycle through the available options.
- Go to the next Program step by:
  - Pressing Program again
  - Press the Set button
  - NOTE: Both accepts current setting
- Exit Time / Sensor setup by:
  - Time out (30 seconds)
  - Pressing any button other than Up / Down, Set or Date / Time

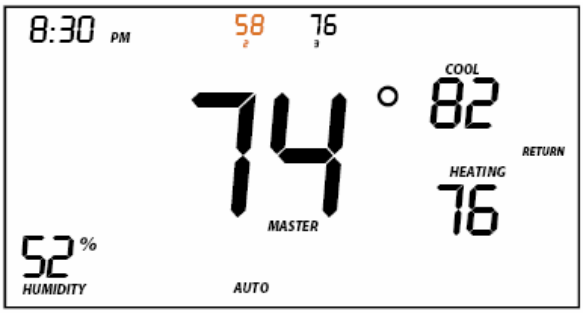
1st press of Time / Sensor:
- Selects day setting
- Up / Down cycles between each day of the week

2nd press of Time / Sensor:
- Selects Time setting
- Up / Down cycles through time in 15 minute increments
- Press and hold of Up / Down cycles faster
- Note: AM / PM changes automatically as needed

3rd press of Time / Sensor:
- Selects Clock Format setting (12 or 24 Hr clock)
- Entire "time" section blinks
- Up / Down cycles through and shows modified time

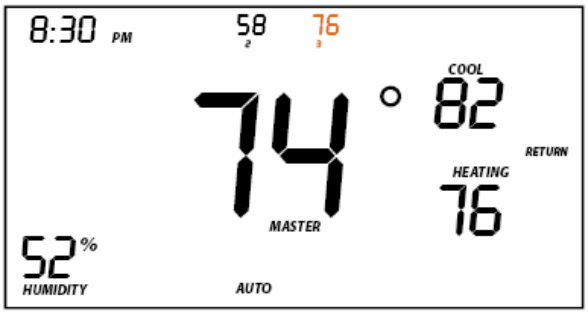
4th press of Time / Sensor:

- Selects which sensor to show in position 1
- Up / Down cycles through 1-9 with none then again



5th press of Time / Sensor:

- Selects which sensor to show in position 2
- Up / Down cycles through 1-16 with none then again



6th press of Time / Sensor:

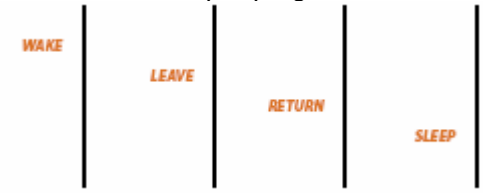
- Selects which Humidity sensor to show
- Up / Down cycles between 1 (no number) and 2

Thermostat Program Button Operation

- The Program button allows you to setup the various pre-programmed modes (Wake, Leave, Return, and Sleep).
- Go to the next Program step by:
  - Pressing Program again
  - Press the Set button
  - NOTE: Both accepts current setting
- Exit Program setup by:
  - Time out (30 seconds)
  - Pressing any button other than Up / Down, Set, or Program

1st press of Program:

- Selects from available pre-program modes
- Up / Down cycles through Wake, Leave, Return, and Sleep
- NOTE: Energy is not a part of this option
- NOTE: Once a pre-programmed mode is selected, that item remains blinking throughout to indicate what you are programming
- NOTE: Once a pre-programmed mode is selected, the current settings are displayed on the thermostat

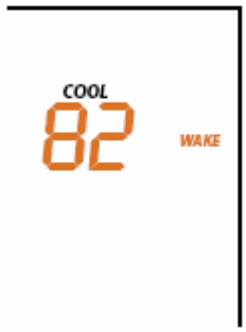


2nd press of Program:
- Selects day setting
- Up / Down cycles between 7 days, weekdays, weekend days, each day
- As you select a different day option, the current pre-programmed settings for that day (or group of days) are displayed

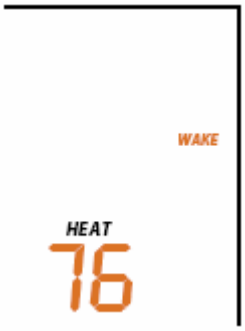
3rd press of Program:
- Selects Start / Time
- Up / Down cycles through time in 15 minute increments
- Press and hold of Up / Down cycles faster

NOTE: AM / PM changes automatically as needed

4th press of Program:
- Selects Cool set point
- Up / Down cycles through temperature



5th press of Program:
- Selects Heat set point
- Up / Down cycles through temperature



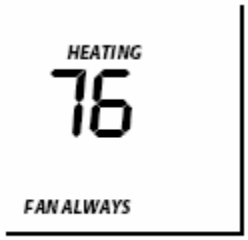
6th press of Program:
- Starts the process all over again to program another Mode / Day
- Up / Down cycles through time in 15 minute increments
- Press and hold of Up / Down cycles faster

NOTE: The 4 modes come pre-programmed. The defaults are:
- Wake: 6AM start, Auto, 65 / 75
- Leave: 8:30AM start, Auto, 60 / 80
- Return: 5:00PM start, Auto, 65 / 75
- Sleep: 11:00PM start, Auto, 60 / 80

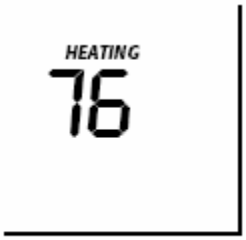
Thermostat Fan and Hold Button Operations

Fan button operations

- The Fan button cycles between Auto and Always On.
- On the display, it simply cycles the text Fan Always to show or not.



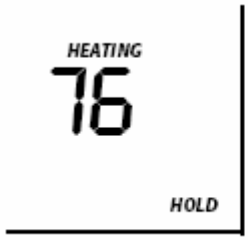
Always On



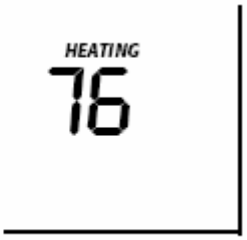
Auto

Hold button operations

- The Hold button over-rides a pre-programmed mode until either:
  - The mode / temp is changed manually by user
    - Including on a remote thermostat / templinc
  - Hold is turned off
- **NOTE:** If the next pre-programmed time comes, it will be ignored unless one of the above items occurs.
- **NOTE:** While hold is enabled, the pre-programmed time notations are not shown.
- **NOTE:** There are no blinking items when using this button.



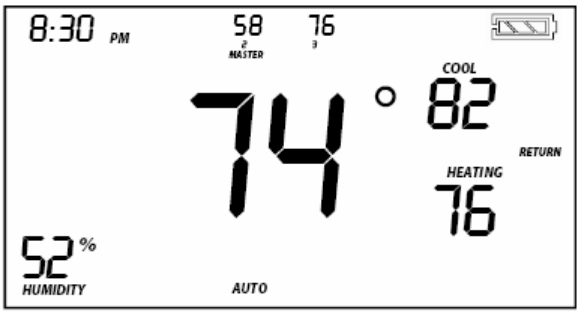
Hold On



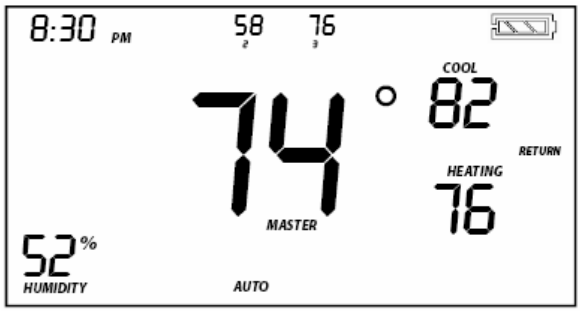
Hold Off

Thermostat Master Button Operation

1st press:
- Makes the local TempLinc the master



Before pressing Master button:
- Notice that remote sensor 2 is currently the Master



After pressing Master button:
- Notice that remote sensor 2 is no longer the Master
- The local temp now is Master controlling temperature

Installation

CAUTIONS AND WARNINGS

Read and understand these instructions before installing and retain them for future reference.

IMPORTANT!
If you are not knowledgeable about, and comfortable with, HVAC circuitry, you should have a qualified HVAC professional install TempLinc for you.

Tools Needed

- Flat blade screwdriver
- Wire cutter / stripper

Preparation

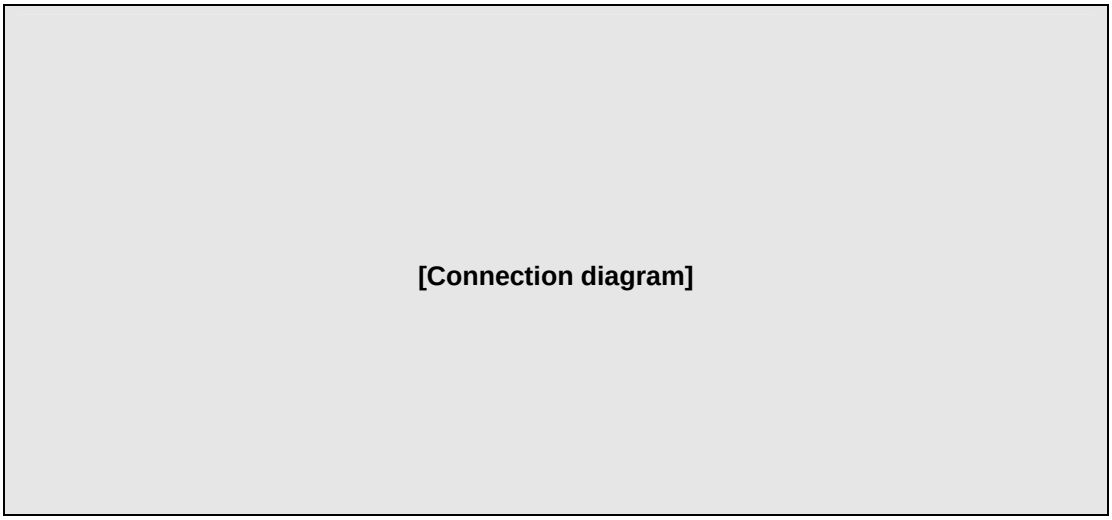
Proper installation of the thermostat will be accomplished by following these step by step instructions. If you are unsure about any of these steps, call a qualified technician for assistance.

1) Make sure your Heater/Air Conditioner is working properly before beginning installation of the thermostat
2) Carefully unpack the thermostat. Save the screws, bracket and instructions
3) Turn off power to the Heating/Air Conditioning system at the main fuse panel. Most residential system have a separate breaker for disconnecting power to the furnace
4) Remove the cover of the old thermostat. If it does not come off easily check to see if it is mounted with screws.
5) Loosen the screws holding the thermostat base or subbase to the wall, and lift away
6) Disconnect the wires from the old thermostat. Tape the ends of the wires as you disconnect them, and mark them with the letter of the terminal for easy reconnection to TempLinc.
7) Keep the old thermostat for reference purposes, until you new thermostat is functioning properly

Wire Connections

If the terminal designations on your old thermostat do not match those on TempLinc, refer to the chart below or the wiring diagram that follows.

Wires from old thermostat terminal	Function	Install on TempLinc connector
	Common 24V	24V COM
	Power 24V	24 RH
	Power 24V	24 RC
	Heat 1	W1
	Heat 2	W2
	Fan	G
	Cooling 1	Y1
	Cooling 2	Y2



Test Operation

1) Turn the power on to the Heating/Air Conditioning system
2) Press the MODE button repeatedly until the HEAT icon appears in the display. Press the UP or DOWN buttons until the set temperature is 10 degrees above room temperature. The furnace should turn on.
3) Press the MODE button repeatedly until the COOL icon appears on the display. Press the UP or DOWN buttons until the set temperature is 10 degrees below room temperature. The air conditioner should turn on.
   NOTE: Most equipment has a time delay of 5 minutes between cool cycles.
4) Press the UP button until the setpoint is equal to the room temperature. Press the FAN button to Fan On. The fan should turn on and run continuously.

Adding a Wireless Thermostat

The TempLinc can be paired with a wireless thermostat (TempLinc Wireless Zone Thermostat) to provide a portable thermostat wherever you want temperature control. You can add up to xx wireless thermostats.

1) Press & hold the Set button on TempLinc Wireless Zone Thermostat

   *TempLinc Wireless Zone Thermostat Set LED goes **GREEN** for xx seconds*

2) Press & hold TempLinc Set button

   *Thermostat will **(Beep)***

*TempLinc Wireless Zone Thermostat will **(Beep)-(Beep)***

3) Test the link by pressing the Master button on the TempLinc Wireless Zone Thermostat

INSTEON Programming

Linking as a Responder

Linking to On

4) Set thermostat to desired state
5) Put controller in linking
6) Press & hold Thermostat Set button

*Thermostat Set LED goes **GREEN** for xx seconds*
*Thermostat will **(Beep)***

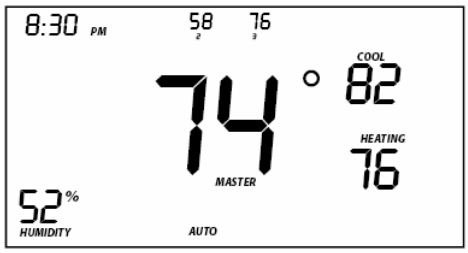
7)

*Linking complete with a **(Beep)-(Beep)** / LED off*

Linking to Off

1) Set thermostat to desired state
2) Put controller in linking
3) Simultaneously Press & hold Thermostat Set button and Down arrow

*Thermostat Set LED goes **GREEN** for xx seconds*
Thermostat will (Beep)
*TempLinc will **(Beep)-(Beep)** / LED off*



Display while in Linking to On or Off

Linking as a Controller

TempLinc can be setup to control other INSTEON devices or trigger software events when there is a change. The following TempLinc changes can be setup as a controller:

- Group 1 - Cooling mode change (scene control)

- Group 2 - Heating mode change (scene control)
- Group 3 - Fan mode change (scene control)*
- Group FE - broadcast on any change (info only)*

* Can only be configured via software.

NOTE: The Wireless TempLinc can also be linked as a controller to Group 1 and 2 but it will operate if there's a TempLinc or not. When it is linked as a controller of a TempLinc, the setpoints between Wireless TempLinc and TempLinc will always be matched. When it is not linked to a TempLinc, the set points are local only. Wireless TempLinc will send group commands based on local temp and the setpoint shown on the display, regardless of whether it's connected to a TempLinc or not.

Linking Process:

1) Press & hold Thermostat Set button until it beeps

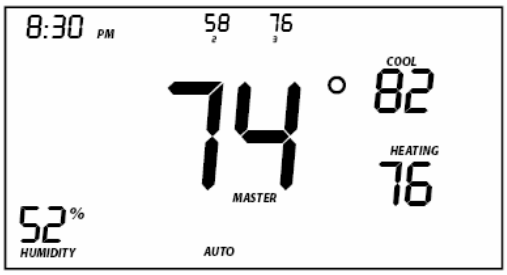
   *Thermostat Set LED blinks **GREEN***
   *Thermostat will **(Beep)***

2) Press:

   - Up arrow to link to Group 1, Cooling mode changes
   - Down arrow to link to Group 2, Heating mode changes

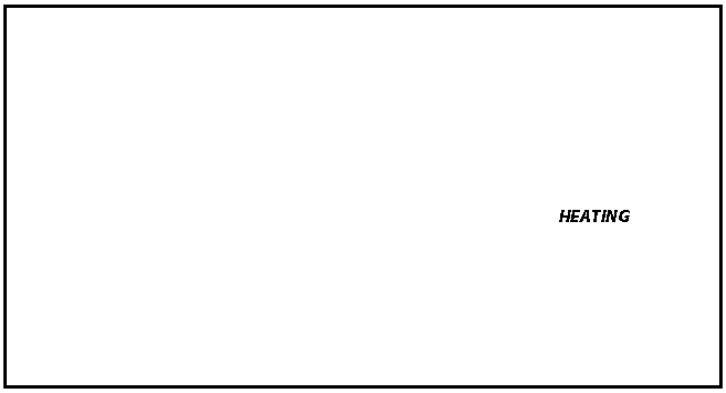
3) Set responder's desired state
4) Press and hold responder Set button

   *Thermostat will **(Beep)-(Beep)** to show completion, LED off*



Upon entering Linking mode

Seen if press Up arrow



Seen if press Down arrow

Can alternate between these 2 by pressing Up and Down

Unlinking

1) Press & hold Thermostat Set button until it beeps

*Thermostat Set LED blinks **GREEN***
*Thermostat will **(Beep)***
as a responder

2) Press & hold Thermostat Set button to put it in unlinking

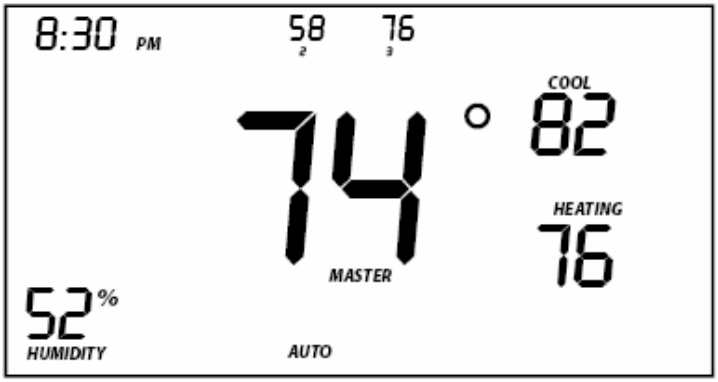
*Thermostat Set LED blinks **RED***
*Thermostat will **(Beep)***
LCD display indicates the group that you are unlinking from

3) Press:

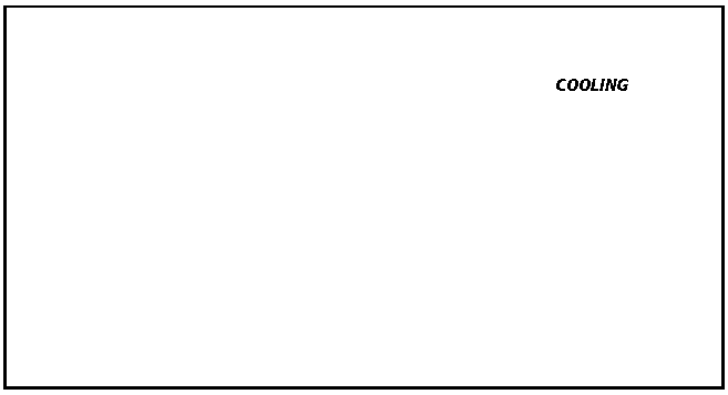
- Up arrow to unlink from Group 1, Cooling mode changes
- Down arrow to unlink from Group 2, Heating mode changes

4) Press and hold responder Set button

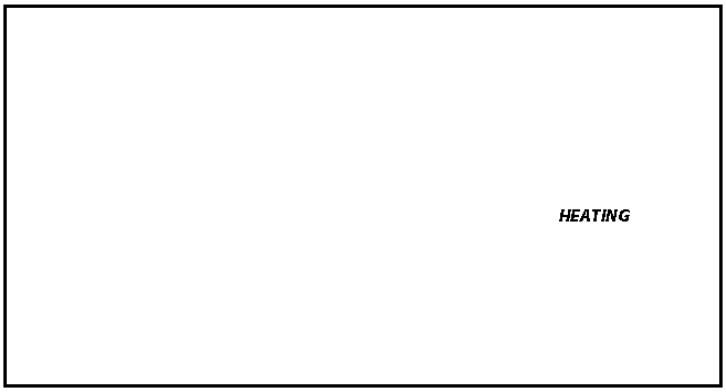
*Thermostat will **(Beep)-(Beep)** to show completion, LED off*



Upon entering Linking mode



Upon entering Unlinking mode
Defaults to Cooling mode



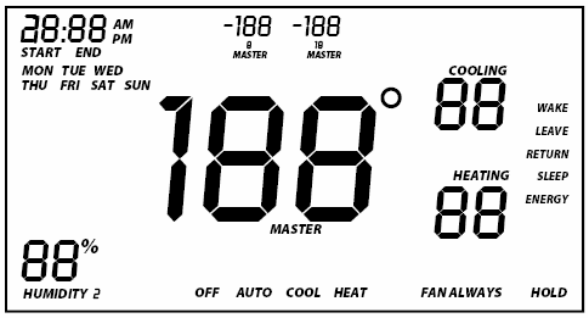
Seen if press Down arrow

Can alternate between these last 2 screens by pressing Up and Down

Factory Setup Modes

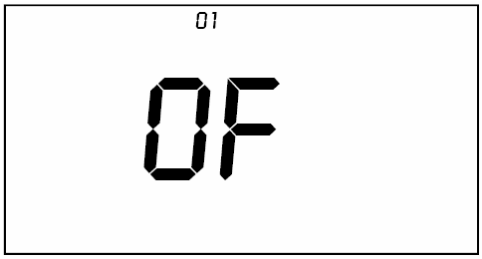
To enter a Factory Setup Mode:

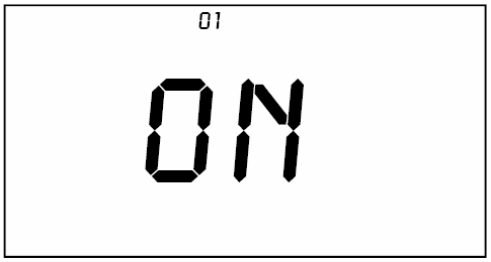
1) Press Mode, Up, and Down buttons simultaneously for 3 seconds to enter all of the Factory Setup Modes below
2) All LCD segments will turn on



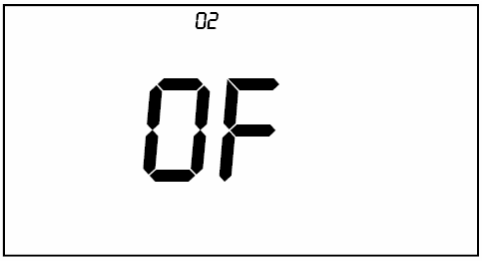
Factory Programming Mode

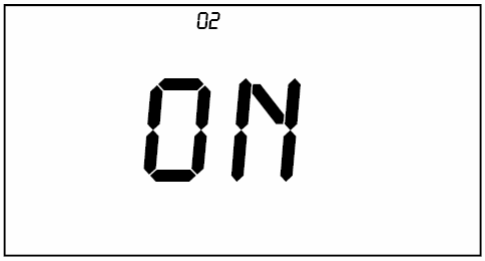
1) Once in Factory Setup Mode, press the Program button and select from one of the following (Press Mode button to step through the options):
    - Sub-mode 1: Beep on button press (Default is Off)
    - Sub-mode 2: Programming lock (Default is Off)
    - Sub-mode 3: Button Lock (Default is Off)
    - Sub-mode 4: Temperature format select (Default is Fahrenheit)
2) Press the Up or Down button to change a setting
    - Sub-mode 1: Beep on button press (Enable / Disable)
        a. Up arrow = On
        b. Down arrow = Off (default setting)



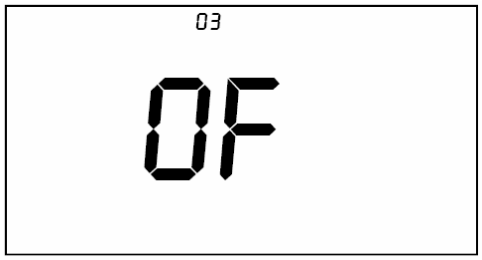


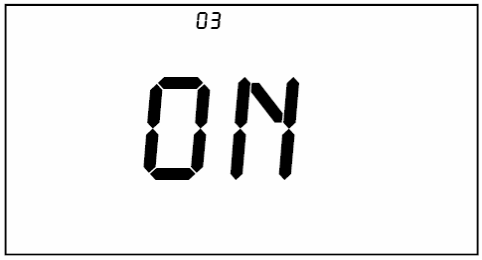
- Sub- mode 2: Programming lock (Enable / Disable)
    a. Up arrow = On
    b. Down arrow = Off (default setting)



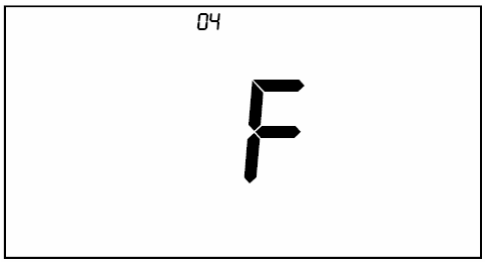


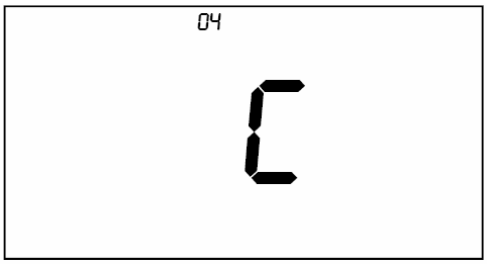
- Sub- mode 3: Button Lock (disables front button presses)
    a. Up arrow = On
    b. Down arrow = Off (default setting)





- Sub- mode 4: Termperature format select (C or F)
  a. Up arrow = C
  b. Down arrow = F (default setting)

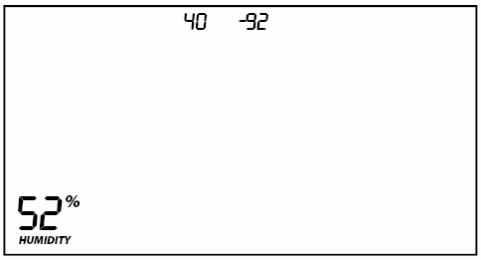


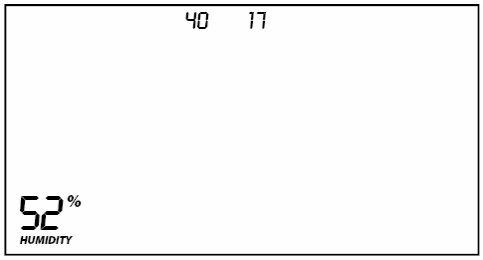


Humidity Calibration Mode

1) Once in Factory Setup Mode, press the Sensor button
2) Press the Up or Down button to select the current humidity level

The display will appear similar to the following





The top numbers represent:

- **40** What the humidity sensor sees
- **-92** or **17** the offset from current reading
- The offset is from -10 to +10
- The displayed number needs to be multiplied by 0.1 to get the actual offset

Factory Reset to Default

Factory Reset Changes

- INSTEON is reset (all links removed)
- Day / time is changed to 12:00, Monday
- Programming times and temperatures are reset to their default

Factory Reset Does Not Change

- Temperature offset
- Humidity Offset
- F or C setting

Option 1

1) Remove power, press and hold Set button while powering up
2) Continue pressing and holding for ~10 seconds

*Device will blink all segments and do continuous **(Beep)** during 10 seconds*

3) When blinking / buzzing stops, release Set button

Device goes into factory reset for ~10 seconds
Screen goes blank, LEDs off
At completion display will briefly show a reset status code:
00 = successful reset

Xx = unsuccessful

4) Device will return to normal operations

Option 2

1) Press & hold Thermostat Set button until it beeps

*Thermostat Set LED blinks **GREEN***
*Thermostat will **(Beep)***
as a responder

2) Press & hold Thermostat Set button again until it beeps

*Thermostat Set LED blinks **RED***
*Thermostat will **(Beep)***
LCD display indicates the group that you are unlinking from

1) Double tap the Set button
2) Press and hold the set button for ~10 seconds
3) Continue pressing and holding for ~10 seconds

*Device will blink all segments and do continuous **(Beep)** during 10 seconds*

4) When blinking / buzzing stops, release Set button

Device goes into factory reset for ~10 seconds
Screen goes blank, LEDs off
At completion display will briefly show a reset status code:
00 = successful reset
Xx = unsuccessful

Certification and Warranty

FCC & Industry Canada Compliance Statement

This device complies with FCC Rules Part 15 and Industry Canada RSS-210 (Issue 8). Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorise aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radiolectrique subi, mme si le brouillage est susceptible d'en compromettre le fonctionnement.

The digital circuitry of this device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna of the device experiencing the interference
- Increase the distance between this device and the receiver
- Connect the device to an AC outlet on a circuit different from the one that supplies power to the receiver
- Consult the dealer or an experienced radio/TV technician

WARNING: Changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Limited Warranty

Seller warrants to the original consumer purchaser of this product that, for a period of two years from the date of purchase, this product will be free from defects in material and workmanship and will perform in substantial conformity to the description of the product in this Owner's Manual. This warranty shall not apply to defects or errors caused by misuse or neglect. If the product is found to be defective in material or workmanship, or if the product does not perform as warranted above during the warranty period, Seller will either repair it, replace it, or refund the purchase price, at its option, upon receipt of the product at the address below, postage prepaid, with proof of the date of purchase and an explanation of the defect or error. The repair, replacement, or refund that is provided for above shall be the full extent of Seller's liability with respect to this product. For repair or replacement during the warranty period, call the INSTEON Gold Support Line at 800-762-7845 with the Model # and Revision # of the device to receive an RMA# and send the product, along with all other required materials to:

Smarthome
ATTN: Receiving
16542 Millikan Ave.
Irvine, CA 92606-5027

Limitations

The above warranty is in lieu of and Seller disclaims all other warranties, whether oral or written, express or implied, including any warranty or merchantability or fitness for a particular purpose. Any implied warranty, including any warranty of merchantability or fitness for a particular purpose, which may not be disclaimed or supplanted as provided above shall be limited to the two-year of the express warranty above. No other representation or claim of any nature by any person shall be binding upon Seller or modify the terms of the above warranty and disclaimer.
Home automation devices have the risk of failure to operate, incorrect operation, or electrical or mechanical tampering. For optimal use, manually verify the device state. Any home automation device should be viewed as a convenience, but not as a sole method for controlling your home.

In no event shall Seller be liable for special, incidental, consequential, or other damages resulting from possession or use of this device, including without limitation damage to property and, to the extent permitted by law, personal injury, even if Seller knew or should have known of the possibility of such damages. Some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of damages, in which case the above limitations and/or exclusions may not apply to you. You may also have other legal rights that may vary from state to state.