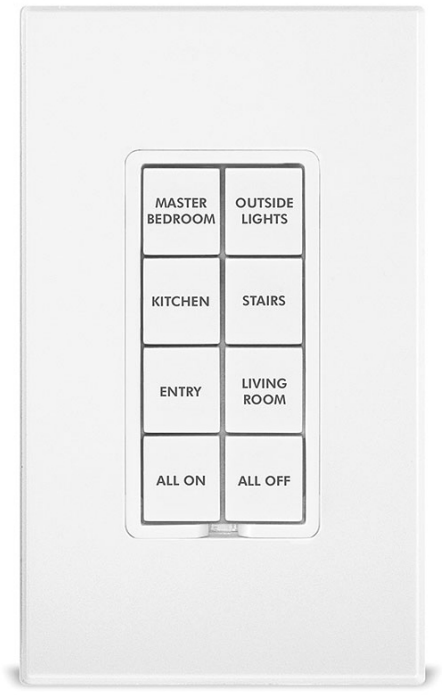
Keypad Dimmer
Owner's Manual
2334-222



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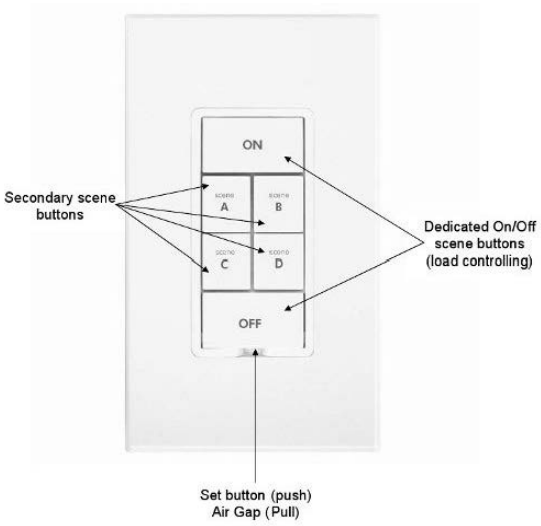
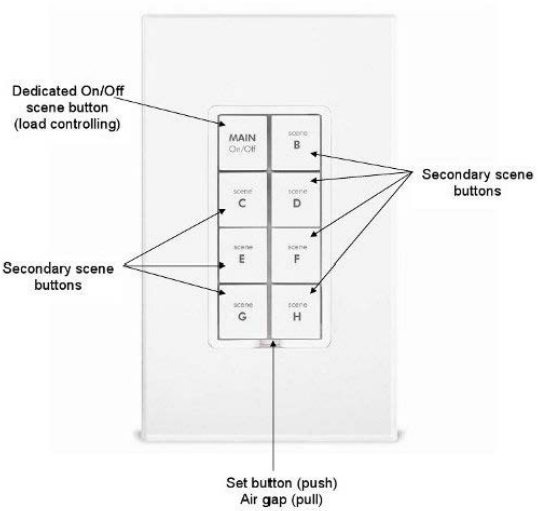
About Keypad Dimmer

Congratulations on your purchase of the elegant, high quality Keypad Dimmer. This in-wall switch with a built-in dimmer can control up to 5 or 8 INSTEON/X10 scenes. Additionally, each button has an LED that can be easily configured as a status indicator for virtually any INSTEON device/scene you wish to monitor. Finally, it comes equipped with INSTEON's patented dual-band communication technology for the most simple, reliable, brilliant remote control available.





Features and Benefits

- Integrated dimmer featuring 32 dim levels and 32 ramp rates
- Wires in behind existing wall switch or in fixture box (requires neutral wire)
- Can contain up to 400 controller/responder links
- X10 compatible
- All settings preserved in non-volatile memory, even through power failures
- Beeper for easy setup assistance
- Local programming lockout available via software
- 2-year warranty

Before Installation

CAUTIONS AND WARNINGS

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

This product is intended for installation in accordance with the National Electrical Code and local regulations in the United States or the Canadian Electrical Code and local regulations in Canada. Use indoors only. This product is not designed or approved for use on power lines other than 100VAC- 277VAC 50/60Hz, single phase. Attempting to use this product on non-approved power lines may have hazardous consequences.

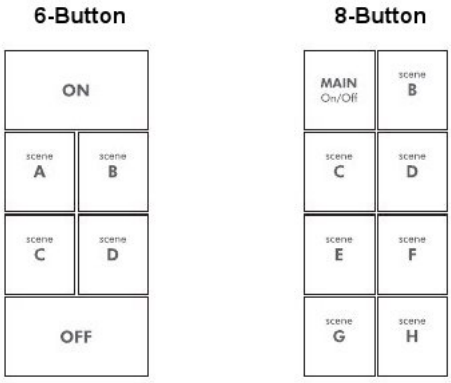
- Use only indoors or in an outdoor rated box
- Be sure that you have turned off the circuit breaker or removed the fuse for the circuit you are installing this product into. Installing this product with the power on will expose you to dangerous voltages.
- The wires connecting Keypad to the incoming power must be protected by a fuse or circuit breaker of 20A or less.
- Connect using only copper or copper-clad wire
- This product may feel warm during operation. The amount of heat generated is within approved limits and poses no hazards. To minimize heat buildup, ensure the area surrounding the rear of this product is as clear of clutter as possible.
- Each INSTEON product is assigned a unique INSTEON ID, which is printed on the product's label.
- To reduce the risk of overheating and possible damage to other equipment, do not use this product to control loads in excess of the specified maximum(s) or install in locations with electricity specifications which are outside of the product's specifications. If this device supports dimming, please note that dimming an inductive load, such as a fan or transformer, could cause damage to the dimmer, the load bearing device, or both. If the manufacturer of the load device does not recommend dimming, use a non-dimming INSTEON on/off switch. USER ASSUMES ALL RISKS ASSOCIATED WITH DIMMING AN INDUCTIVE LOAD.
- When mounting multiple-ganged junction box, the Keypad Dimmer is de-rated for 200-watts less for each immediately adjacent dimmer installed. For example, 600 W load control becomes 400 W with another dimmer to the immediate right or left. Use a triple-gang box with a mechanical switch in the center to avoid de-rating.

IMPORTANT!
If you have any difficulties or questions, consult an electrician. If you are not knowledgeable about or and comfortable with electrical circuitry, you should have a qualified electrician install the product for you.

In the Box	Tools Needed		Optional Accessories
Keypad Dimmer Module	Flathead screwdriver	Wire cutter/stripper	Mini Remote
Quick Start Guide	Phillips screwdriver	Voltage tester	INSTEON Hub

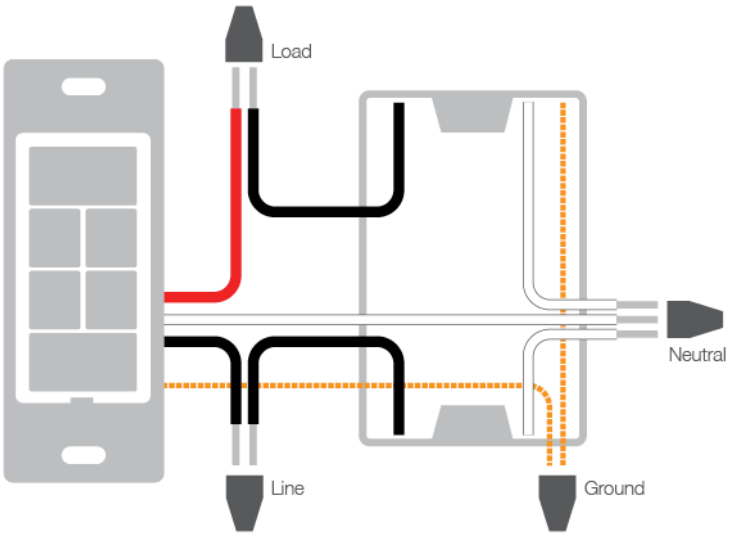
Button Naming

Throughout this manual, we will use the following naming conventions:



Installation – Circuit with 1 Switch

1) Turn off circuit breaker(s) which feed the switch junction box (or remove fuse(s)). Verify that the power is off.
2) Remove trimplate from the switch, unscrew the switch you are replacing and gently pull out from wall
3) Disconnect wires from switch[1]
4) Turn breaker on
5) Using a voltage tester, identify the Line and Load wires that are connected to the switch
6) Identify Neutral and Ground wires
7) Turn breaker off
8) Connect wires as follows (confirm firm attachment with no exposed wire)



Keypad Wire	Home Wire
Bare copper	Ground
White	Neutral
Red	Load
Black	Line

9) With button labels right-side up, gently place Keypad into junction box and screw into place
10) Turn breaker on

Keypad's LEDs will illuminate

11) Verify Keypad is working properly by turning the light on and off.
12) Reinstall the trim plate.

Installation – Circuit with 2 Switches

Circuits with 2 switches controlling the same load are called 3-way circuits. The most common example of a 3-way circuit is hallway lighting, with a switch at either end of the hall. To install Keypad in a 3-switch circuit, both switches need to be replaced by Keypads and/or SwitchLincs.
In this example, we will install a 3-way circuit with 2 Keypads, A and B.

1. Turn off circuit breaker(s) feeding power to either of the switch junction boxes (or pull fuse(s))
2. Pull both switches out of their junction boxes. Each switch will have 3 wires connected to it[2]
3. Disconnect the wires from the old switches.[3] Make sure that the wires are not touching anything
4. Turn breaker(s) on
5. Using a voltmeter, test wires from both switches until you find Line (120VAC, usually black)[4]

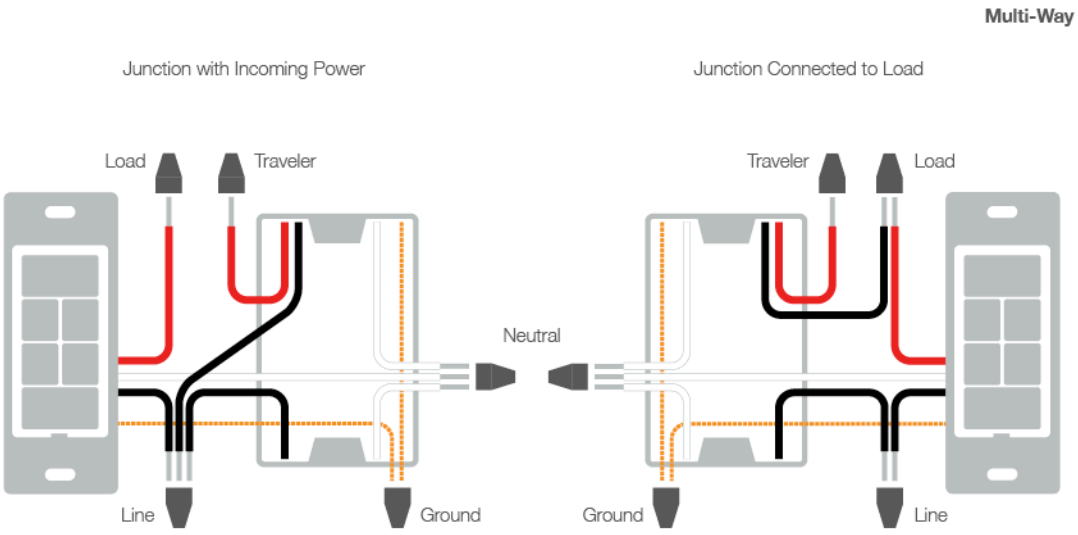
Note: the other 2 wires connected to this switch are Traveler wires

[1] If the wires cannot be detached by unscrewing them, cut the wires where they enter the switch, then strip ½" of insulation off the ends.
[2] If switch has 4 wires connected to it, it is part of a 3-switch or higher circuit. See next section.
[3] If the wires cannot be detached by unscrewing them, cut the wires where they enter the switch, then strip ½" of insulation off the ends
[4] Only one switch in the circuit was connected to Line.

6. Turn breaker(s) off
7. Connect the Line wire and the black[5] Traveler wire to the black wire on Keypad A with a wire nut
8. Cap the other Traveler wire with a wire nut
9. Cap A's red wire
10. Connect neutral to A's white wire
11. Connect Ground to A's bare copper wire
12. In Keypad B's junction box, find the Load wire (connects switch to lights, commonly red and will be the only wire connected to the switch other than the Travelers)
13. Connect the Load wire to B's red wire
14. In the same junction box, connect the black Traveler wire to B's black wire
15. Cap the other Traveler wire
16. Connect Neutral to B's white wire
17. Connect Ground to B's bare copper wire
18. With button labels right-side up, gently place Keypads into junction boxes and screw in place
19. Turn breaker(s) on

Both Keypads' LEDs will illuminate.

20. Verify Keypad A is working properly by turning the light on and off
21. Follow steps on Page 8 to cross-link both keypads so that they both control the load
22. Reinstall trim plates



[5] If black is not available choose one of the Travelers and make note of its color. Instructions will refer to it as black; if both are black, choose one and use voltmeter to determine which of the black Travelers in the other junction box you have chosen.

Installation – Circuit with 3 (or more) Switches

Circuits with 3 switches are called 4-way circuits, circuits with 4 are called 5-way, and so on. All switches in multi-way circuits need to be replaced by either a Keypad and/or SwitchLinc).

1. Turn off the circuit breaker(s) which feed power to any of the switch junction boxes (pull fuse(s))
2. Pull all switches out of their junction boxes. (2 of the switches will have 3 wires connected; the rest of the switches will have 4 wires connected)
3. Disconnect the wires from the old switches[6]
4. Make sure that no one will touch the wires and that the wires are not touching anything
5. Turn breaker(s) on
6. Using a voltmeter, test wires on switches with 3 wires connected until you find Line (120VAC, usually black)[7]

Note: the other 2 wires connected to this first switch are Travelers

7. Turn breaker(s) Off.
8. Wire nut the Line wire and the black[8] Traveler wire to the black wire on your first Keypad
9. Cap (place a wire nut) on the other Traveler wire
10. Cap the first Keypad's red wire
11. Connect neutral to the first Keypad's white wire
12. Connect Ground to the first Keypad's bare copper wire
13. On the other switch with 3 wires connected, find the Load wire (connects switch to lights, commonly red and the only non-traveler) and connect to the third Keypad's red wire
14. In the same junction box, connect the black Traveler to the third Keypad's black wire
15. Cap the other Traveler wire
16. Connect Neutral to the Final Keypad's white wire
17. Connect Ground to the Final Keypad's bare copper wire
18. For each "middle" junction box (all remaining/4-wire switches):

    - Connect the 2 black Travelers to the middle Keypad's black wire
    - Cap the 2 other Traveler wires
    - Cap the middle Keypad's red wire
    - Connect Neutral wire to middle Keypad's white wire
    - Connect Ground wire to middle Keypad's bare copper wire

19. With button labels right-side up, gently place Keypads into junction boxes and screw in place.
20. Turn breaker(s) on.

All Keypads' LEDs will illuminate

21. Verify Keypad A is working properly by turning the light on and off
22. Follow steps on Page 8 to cross-link all keypads so that they all control the load.
23. Reinstall the trim plates

[6] If the wires cannot be detached by unscrewing them, cut the wires where they enter the switch, then strip ½" of insulation off the ends.
[7] Only one switch is connected to Line.
[8] If black is not available choose one of the Travelers and make note of its color. Instructions will refer to it as black; if both are black, choose one and use voltmeter to determine which of the black travelers in the other junction box you have chosen.

Local Control

LEDs

Button	LED	Meaning
ON	On	All on
OFF	On	All off
MAIN On/Off	On	All on
MAIN On/Off	Off	All off
Scene button	On	Scene members are on

Button Taps

Button Type	Button LED State before Tap	Effect of Tap	Effect of Double-tap
Toggle	Off	Turn scene On	Turn scene members on instantly
Toggle	On	Turn scene Off	Turn scene members off instantly
Always On	Either	Turn scene On	Turn scene members on instantly
Always Off	Either	Turn scene Off	Turn scene members off instantly

Note: The connected light(s) will react just like the scene responders to button presses of MAIN On/Off (when in 8-button configuration) and ON or OFF (when in 6-button configuration).

1) The LED will mimic the on/off status of a dimmer whose scene level is 100% bright
2) The ON button on a 6-button Keypad is an “Always On” button while the OFF button is an “Always Off” button. Other buttons are toggle by default.

Button Press and Holds

Button Type	Button LED before Tap	Effect of First Press and Hold	Effect of Subsequent Press and Holds
Toggle	Off	Brighten scene until release	Opposite of last Press and Hold (e.g. if last was brighten, it will dim)
Toggle	On	Dim scene until release	Opposite of last Press and Hold (e.g. if last was brighten, it will dim)
Always On	Either	Brighten scene until release	
Always Off	Either	Dim scene until release	

INSTEON Setup

A scene consists of 1 or more INSTEON devices that respond to 1 or more INSTEON controller(s). When the scene is activated (turned on), all scene members return to the states they were at when the scene was programmed. INSTEON scenes let you activate dramatic lighting moods at the touch of a button. For example, you can set all the lights in a scene to dim to 50% or turn certain lights on while turning others off, all with the tap of a button on any INSTEON controller. INSTEON scenes are easy to set up: just follow the directions below.

Add Keypad Button to a Scene as a Controller

Follow the steps below to control a scene (one or more INSTEON devices) from a Keypad button

1) Tap the Keypad button of choice (use ON for 6-button Keypads for "main" scene)
2) Press and hold Keypad's Set button until Keypad beeps

   Keypad's scene button LED will blink and the Set button LED will blink green
3) Adjust the scene responder to the state you want when the scene is activated from Keypad (e.g., 50%, 25%, off)
4) Press and hold the responder's Set button until it double-beeps (or until its LED/load flashes)

   Keypad will double-beep and its scene button and Set button LEDs will stop blinking[9]

   Responder's LED will stop blinking and it may double-beep[10]
5) Confirm that scene addition was successful by tapping on/off on the Keypad scene button

   The responder will toggle between the scene's on level and off
6) If you wish to add more responders to the scene, repeat steps 1-5 for each additional scene responder (or see Add Multiple Responders to a Scene)

Remove Keypad Button from a Scene as a Controller

If you are disabling (or removing) any scene responders of Keypad, it is very important that you remove it from the Keypad scene before disabling if at all possible. Otherwise, delays and error blinks / reports may result. If the device is not available to disable using this technique please use software to remove it from Keypad.

1) Tap the Keypad scene button (ON for 6-button main scene)

   The responder(s) will respond
2) Press and hold the Keypad's Set button until it beeps

   Keypad's scene button LED will blink and the Set button LED will blink green
3) Press and hold the Keypad's Set button until it beeps again

   Keypad's scene button LED will continue blinking and Set button LED will blink red
4) Press and hold the responder's Set button until it double-beeps and/or LED blinks

   Keypad will double-beep and its scene button and Set button LEDs will stop blinking
5) Confirm that Unlinking was successful by tapping the scene button on and off.

   The responder will not respond
6) If you wish to remove multiple responders from Keypad, repeat steps 1-5 for each additional responder (or see Remove Multiple Responders from a Scene)

[9] If either the Keypad or responders LED continues to blink, the addition failed. Tap the device's Set button until LED stops blinking and try again.
[10] If either the Keypad or responders LED continues to blink, the addition failed. Tap the device's Set button until LED stops blinking and try again.

Adding Keypad Button to a Scene as a Responder

1) Press and hold the scene controller button until it beeps[11]

   Controller's LED will blink

2) Tap the Keypad button you wish to be a responder of the scene at least once

3) Tap the button again if necessary to get the button's LED to the desired state for the scene (press and hold if adding the main scene at a dimmed level)

4) Press and hold Keypad's Set button until it double-beeps

   Keypad's scene button LED will flash once and return to previous state

   Controller LED will stop blinking and it will double-beep[12]

5) Confirm that scene addition was successful by tapping on then off on the controller's scene button

   Keypad button LED will toggle between on and off (and load if main scene)

Removing Keypad from a Scene as a Responder

If you are going to discontinue using Keypad, it is very important that you remove it from all of its scene controllers. Otherwise, the controllers will resend commands, causing delays and possible error reports.

1) Press and hold the controller's set button until controller beeps[13]

   Controller's LED will blink

2) Press and hold the set button until controller beeps again[14]

   Controller's LED will continue blinking

3) Tap the Keypad button to remove from scene

4) Press and hold the set button on Keypad until it double-beeps

   Keypad's LED will flash once

   Controller's LED stop blinking

5) Confirm that unlinking was successful by tapping the button you just unlinked from on the controller.

   Keypad will no longer respond

Advanced Features

Add Multiple Scene Responders

1) Tap the scene controller button on Keypad.

2) Press and hold Keypad's Set button until it beeps

   Keypad's scene button LED will blink and Set button LED will blink green

   All illuminated LEDs on Keypad will brighten to 100%

3) Tap Keypad's Set button

   Keypad's scene button and Set button LEDs will continue blinking

4) For each responder you are adding:

[11] If the controller does not have a beeper, wait until its LED begins blinking.
[12] Most models
[13] For devices without beepers hold until its LED begins blinking (this may take 10+ seconds).
[14] For devices without beepers hold until its LED begins blinking (this may take 10+ seconds).

- Adjust the responder to the desired scene state (for Keypads you must tap the button at least once to reach the desired state).
- Press and hold responder's Set button until it beeps and/or LED flashes

Keypad will double-beep

5) After all responders have been added, Tap Keypad's Set button

Keypad's scene button and Set button LEDs will stop blinking

Keypad's LEDs will return to normal brightness

6) Test scene by tapping the scene button a couple of times

All the responders added above will respond

Remove Multiple Scene Responders

1) Tap the scene controller button on Keypad
2) Press and hold Keypad's Set button until it beeps

Keypad's scene button LED will blink and Set button LED will blink green

All illuminated LEDs on Keypad will brighten to 100%

3) Press and hold Keypad's Set button again until it beeps again

Keypad's scene button and Set button LEDs will continue blinking red

4) Tap Keypad's Set button

Keypad's scene button and Set button LEDs will continue blinking red

5) For each responder you are removing:
   - If it's a Keypad button, tap the button
   - Otherwise, press and hold responder's Set button until it beeps and/or LED flashes.
6) After all responders have been removed, Tap Keypad's Set button

Keypad's scene button and Set button LEDs will stop blinking

Keypad's LEDs will return to normal brightness

7) Test scene by tapping the scene button a couple of times

All the responders added above will respond

Synchronized Scenes

Synchronized scenes are scenes where all members stay synchronized. Common examples include 3-way lighting circuits and scenes with a single load-bearing device.

<u>Example: 3-Way Circuit (Circuit with 2 Keypads, A and B)</u>

1) Turn both loads on to the desired (and same) scene level
2) Press and hold A's Set button until it beeps

A's scene controller button will blink and Set button LED will blink green

3) Press and hold B's Set button until it double-beeps

B's scene controller button and Set button LED will flash

A will double-beep and its LEDs will stop blinking

4) Press and hold Switch B's Set button until it beeps

B's scene controller LED will blink and Set button LED will blink green

5) Press and hold Switch A's Set button until it double-beeps (or LED flashes)

   A will double-beep and its scene controller button and Set button LED will flash

   B will double-beep and its LEDs will stop blinking

6) Test the group by controlling the load from A and then B

   The load and A's and B's scene controller button LEDs will all remain in sync

Example: Scene with any number of "N" members

We recommend using home-management software such as HouseLinc to create multi-member synchronized scenes. However, the following steps, when carefully followed, will also work.

1) Turn all switches/dimmers on to the desired (and same) scene level
2) For each switch "X" where X goes from A through N:
   a. Press and hold Switch X Set button until it beeps (or LED blinks)

      Switch X's LED will blink

   b. Tap Switch X Set button

      Switch X LED will continue blinking

   c. For every other switch in scene, press and hold the Set button until it double-beeps and/or its LED flashes

      Switch will double-beep and its LED will flash once

   d. Tap Switch X's Set button

      Switch X LED will beep and its LED will stop blinking
3) Test the group by controlling the load from each switch

   The load(s) and all switches will remain in synch

Controlling the Keypad Load from Another Button on the Same Keypad

Have a button on the keypad control the load as part of a scene.

1) Press and hold the scene control button until it beeps

   Keypad's scene button LED will blink and Set button LED will blink green.

2) Press and hold the responder keypad button until it beeps

   Keypad's scene button and Set button LEDs will stop blinking

3) Confirm that the scene addition was successful by tapping the controller's scene button a couple of times

   Both the controller button and Main or On/Off button will turn on and off together

Changing Button Modes (Toggle/Non-Toggle Mode)

You can change any button to any one of 3 button modes (we recommend using home-management software such as HouseLinc):

- **Toggle** – toggles between on and off commands each time it is tapped
- **Always On** – sends on every time it is tapped

Note: You cannot change the dedicated ON and OFF buttons in 6-button configuration.

4) Tap the scene button you want to change
5) Press and hold Keypad's Set button until it beeps
   The scene button's LED will begin blinking and Set button LED will blink green
   All illuminated LEDs on Keypad will brighten to 100%
6) Press and hold Keypad's Set button it beeps again
   The button LEDs will continue blinking and Set button LED will blink red
7) Press and hold Keypad's Set button until it beeps a third time
   The button LEDs will stop blinking
   The button function rotates to the next mode in the cycle: Toggle → Always Off→ Always On→ Toggle
8) Tap the button several times to confirm it is now in the desired state
9) If you wish to rotate button mode again, return to step 2

Adjust LED Brightness

Keypad's LEDs can be set to any one of 32 brightness levels.

6-Button Configuration

1) Simultaneously tap the A and D buttons
   Keypad will beep
2) Press and hold the On (brighter) and Off (dimmer) buttons to adjust LED brightness
3) When you have reached the desired brightness, simultaneously tap the A and D buttons again
   Keypad will beep

8-Button Configuration

1) Simultaneously tap the C and F buttons
   Keypad will beep
2) Press and hold the On button to adjust the LED brightness. (Each press and hold will toggle between brightening and dimming)
3) When you have reached the desired brightness, simultaneously tap the C and F buttons
   Keypad will beep

Turn Button Beep On or Off

The Keypad buttons can be set to Beep Mode so Keypad will beep every time a button is used. This feature is disabled by default; to enable it, use home-management software such as HouseLinc or follow the steps below.

6-Button Configuration

1) Simultaneously tap the B and C buttons
   Keypad will beep
   Keypad's beeper will toggle to on (if it was off) or off (if it was on)

8-Button Configuration

1) Simultaneously tap the D and E buttons
   Keypad will beep
   Keypad's beeper will toggle to on (if it was off) or off (if it was on)

X10 Setup

Add X10 Address to a Button

1) Tap the Keypad scene button you want to add

2) Press and hold Keypad's Set button until it beeps.

Set button LED will blink green

3) Send the desired X10 Address plus ON 3 times in a row (e.g. send B5-BON-B5-BON-B5-BON)

Keypad will double-beep and the Set button LED will stop blinking

Remove X10 Address from a Button

If you are no longer going to utilize an X10 address associated with Keypad, it is very important that you remove its X10 address. Otherwise, Keypad will still listen for X10 commands (somewhat hindering INSTEON reception) and may respond to spurious X10 "noise" which is unavoidable. Furthermore, Keypad will transmit an X10 address and command every time the button is pressed.

1) Tap the Keypad button

2) Press and hold Keypad's Set button until it beeps

Set button LED will blink green

3) Press and hold Keypad's Set button again until it beeps again

The button's LED will continue blinking red.

4) Send the X10 Address plus ON 3 times (e.g. send B5-BON-B5-BON-B5-BON)

Keypad will double-beep and the Set button LED will stop blinking

Advanced X10 Programming

Instructions on setting X10 primary address and scene addresses can be found online:

http://www.insteon.com/insteon-x10-programming.html

Power Restore

Keypad stores all of its scenes, properties, etc. in non-volatile memory. As such, all settings are retained after a power outage. Upon power being restored, Keypad will return its connected load and all LEDs to their states prior to power outage.

Factory Reset

Factory Reset clears all user settings from Keypad including INSTEON scenes, on-levels, ramp rates, X10 addresses, etc.

1) With a small screwdriver or your fingernail, pull out Set button to create an air gap

2) Wait 10 seconds

3) Push in Set button and hold. Do not let go

Keypad will begin to emit a long beep

4) When the beep stops, release the Set button.

Device's embedded software will rewrite all settings to factory defaults

A couple of seconds will pass

Keypad will double-beep and its LEDs will return to normal brightness

The connected load will turn on and Keypad will return to ready mode

Adjust Local Settings

Each of the Keypad buttons is considered a “scene button,” meaning you can use any of the buttons on Keypad to create INSTEON scenes. Each button will control its own scene, only sending commands to devices linked specifically to that button. Dimmable responders may behave differently, depending on whether you tap, double-tap or press and hold a button to activate/deactivate a scene. Non-dimming responders will not respond to press-and-hold brighten or dim commands; they will only turn full-on or full-off in response to taps and double-taps.

- When the LED of the button is on, the scene has been activated (turned on)
- When the LED of the button is off, the scene has been deactivated (turned off)

Activating/Deactivating scenes with the Keypad buttons:

- **Tap** to activate

  Dimmable responders will turn on at their preset on-level at their programmed ramp rate.
  Non-dimming responders will immediately turn full-on.

- **Tap** to deactivate

  Dimmable responders will turn full-off at their programmed ramp rate.
  Non-dimming responders will immediately turn full-off.

- **Double-Tap** to activate

  Responders (both dimming and non-dimming) will immediately turn full-on

- **Double-Tap** to deactivate

  Responders (both dimming and non-dimming) will immediately turn full-off

- **Press and hold** to activate

  Dimming responders will begin to brighten, unless they are already at full-on.
  Non-dimming responders will ignore the command and remain at their current state.
  When you release the button, the responders will stop going brighter.

Once the scene is activated, pressing and holding the button will toggle between brightening and dimming the responders. Non-dimmable responders will ignore press-and-hold brighten/dim commands and remain at their current state.

LED Behavior

Keypad has a dual-color green and red LED which momentarily indicates if a button press was successfully communicated to all scene members.

LED State	Meaning
Blinks green once	One or more scene members acknowledge the button press.
Blinks red once	One or more scene members did not acknowledge the button press (note: scene members may still have heard the scene command and adjusted their settings)

Local On-Level

The local on-level is the default brightness level at which the light(s) physically wired to Keypad will turn on. The default local on-level is 100%, but can be set to any one of 33 settings, 32 fixed brightness levels (3% to 100%) or “Resume Bright,” which will result in the light returning to the brightness level it was at prior to being turned off.

We recommend using home-management software such as HouseLinc to set the local on-level. However, you can also change it manually by following the steps below.

1) Press and hold On and/or Off (or Main in 8-button configuration) until the connected light is at the brightness desired when turned on locally (turn the light off if you wish to use the “Resume Bright” feature)
2) Tap the Set button

   Keypad will beep
3) Test the Local On-Level settings by tapping the On/Off or Main buttons

Air Gap

To remove all power from Keypad and connected light(s), pull out the Set button at the bottom of the switch as far as it will go, about 1/8”. (It might be helpful to use a small screwdriver.) This will open the mechanical contacts and create an air gap.

To restore power, press the air gap back into place until its top is even with the trim frame.

Beep on Button Press

Default = Off

This setting is adjustable via software or a central controller only.

Error Blink

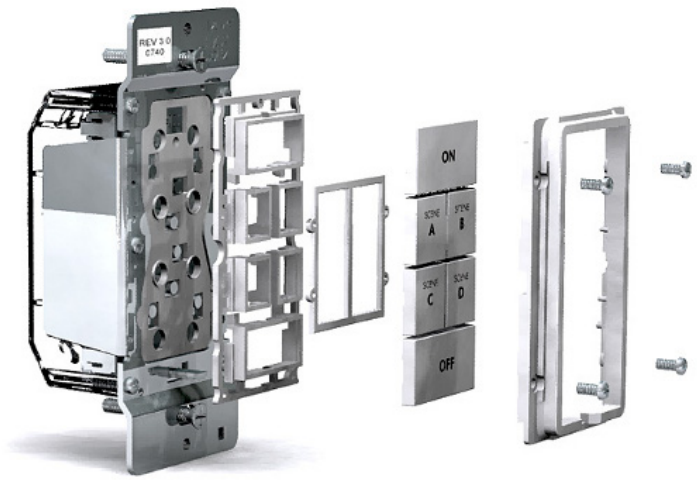
Default = on

This setting is adjustable via software or a central controller only. Keypad Dimmer LED blinks red for a few seconds if one or more responders do not acknowledge a message.

Changing to 6-Button or 8-Button Plate

- The 6-button plate provides a dedicated load ON button at the top of the switch, a dedicated load OFF button at the bottom, and four programmable secondary buttons between the On and Off buttons
- The 8-button plate provides a dedicated load MAIN On/Off button in the top left-most position of the keypad and seven programmable secondary buttons.

Attach the change-out plate to the switch body by aligning the tabs. Snap into place.



Note:

For proper operation, Keypad must be programmed to operate in 6-button or 8-button mode, corresponding to whichever plate is attached. See Configuring for 6 or 8-Button Operation.

Configuring for 6 or 8-Button Operation

Changing to 6-Button Configuration

1) Replace the 8-button plate with the 6-button plate (see Changing to 6 or 8-Button Plate)
2) Gently pull the set button out as far is it will go
3) Wait 10 seconds
4) While simultaneously holding the On and Off buttons, carefully push the set button back in, flush with the trim frame
5) Continue holding the On and Off button until the keypad beeps

Keypad is now in 6 button mode

Changing to 8-Button Configuration

1) Replace the 6-button plate with the 8-button plate (see Changing to 6 or 8-Button Plate)
2) Gently pull the set button out as far is it will go
3) Wait 10 seconds
4) While simultaneously holding the On/Off (upper left-most) button and the H (bottom right-most) button, carefully push the set button back in, flush with the trim frame
5) Continue holding the On/Off (upper left-most) button and the H (bottom right-most) button until the keypad beeps

Keypad is now in 8 button mode

Changing Buttons

Keypad buttons can be swapped out with custom-etched buttons to customize its appearance. Using a small, flat-edged screwdriver *only*, carefully pry up on the sides of the keys from the middle of the keypad (when possible). Make sure you are centered on the key so as to catch the small edge located there for this purpose.

Please note that behind the buttons are clear plastic filler pieces; these diffuse the buttons' LEDs' lights more elegantly. Use care to keep these filler pieces in the button frame as you reassemble the keypad.

Should any damage occur to Keypad during customization, please contact 800-762-7845 and we will be happy to replace your frame.

Advanced Features

Local Ramp-Rate

The local ramp rate is the time it takes for the light(s) physically wired to Keypad to brighten from off to 100% brightness. The default ramp rate is 0.5 seconds, but it can be set to different rates. When set manually, it can be set from 0.1 to 9 seconds. However, when using home-management software such as HouseLinc, the ramp rate may be configured anywhere from 0.1 seconds to 8 minutes. Follow the instructions below to manually change the local ramp rate.

1) Adjust the connected light(s) to brightness corresponding to the desired ramp rate

Brightness Level	Ramp Rate in Seconds
90-100%	0.1
77-87%	0.2
65-74%	0.3
52-61%	2.0
39-48%	2.0
26-35%	4.5
13-23%	6.5
1-10%	8.5
1%	9.0

2) Double-tap the Set button on your Keypad

   Keypad will double-beep

3) Test the ramp rate settings by tapping the On/Off buttons on your Keypad or Controller.

   Connected lights will ramp up and down at the new rate.

4) Start again if the ramp rate is not as desired or, if your double tap was not fast enough, you may have accidentally changed the Local On-Level instead of the local ramp rate (note: software allows you to set the on levels and ramp rates exactly as desired and consistently around the house)

Optional Accessories

For a list of accessories, please visit: http://www.insteon.com/accessories.html

Specifications

General		
Product Name	Keypad Dimmer - INSTEON 6/8-button Scene Control Keypad with Dimmer (Dual-Band)	
Brand	INSTEON	
Manufacturer Product Number	2334-2xx where xx could be any number between 0 and 9.	
UPC	2334-222 813922013108 Keypad Dimmer, 8 Button, White 2334-223 813922013115 Keypad Dimmer, 8 Button, Ivory 2334-224 813922013122 Keypad Dimmer, 8 Button, Almond 2334-225 813922013139 Keypad Dimmer, 8 Button, Light Almon 2334-226 813922013146 Keypad Dimmer, 8 Button, Black 2334-227 813922013153 Keypad Dimmer, 8 Button, Brown 2334-228 813922013160 Keypad Dimmer, 8 Button, Gray 2334-232 813922013177 Keypad Dimmer, 6 Button, White 2334-233 813922013184 Keypad Dimmer, 6 Button, Ivory 2334-234 813922013191 Keypad Dimmer, 6 Button, Almond 2334-235 813922013207 Keypad Dimmer, 6 Button, Light Almon 2334-236 813922013214 Keypad Dimmer, 6 Button, Black 2334-237 813922013221 Keypad Dimmer, 6 Button, Brown 2334-238 813922013238 Keypad Dimmer, 6 Button, Gray	
FCC ID	SBP23342	
Industry Canada	5202A-23342	
Patent Number	7,345,998 US, International Patents Pending	
Warranty	2 Years, Limited	
INSTEON		
INSTEON	6 or 8 controller scenes and 6 or 8 responder scenes	
Maximum Scene Links	400	
Brightness Levels	32 (256 with software)	
Local On Level	Adjustable, 32 levels plus Resume Dim	
Local Ramp Rate	Adjustable, 0.1 seconds to 9 seconds locally, 0.1 seconds to 8 minutes via software	
Scene Commands Supported as Controller	On	Off
	Fast On	Fast Off
	Press and Hold Bright	Press and Hold Dim
Scene Commands Supported as Responder	On	Off
	Fast On	Fast Off
	Incremental Bright	Incremental Dim
	Press and Hold Bright	Press and Hold Dim

Software Configurable	Yes, Always
RF Range	150’ Open air
X10 Support	Yes
X10 Addresses	256 max, unassigned by default
INSTEON Device Category	0x01 Dimmable Lighting Control
INSTEON Device Subcategory	6-button models: 0x42 8-button models: 0x41
Mechanical	
Mounting	Standard, single gang wall box
Wires	4, 16 gauge
Wires	Black - Hot
	White - Neutral
	Red - Load
	Bare Copper - Ground
Case Color	Clear
Set button	1
Plastic	UV Stabilized Polycarbonate
Beeper	Yes
LED	1, dual-color greed/red
Unit Dimensions	4.1" H x 1.8" W x 1.4" D
Box Dimensions	4.3” W x 2.1” D x 2.3” H
Weight	3.8 oz. (.24 lbs.)
Shipping Weight	5.0 oz, (.32 lbs.)
Operating Environment	Indoors
Operating Temperature Range	32-104 F
Operating Humidity Range	0-85% Relative Humidity
Electrical	
Voltage	120VAC-277VAC +/- 10%, Split, Single Phase
Frequency	50/60Hz
Maximum Dimmer Load	600 Watts
Load Type(s)	Incandescent
Surge Resistance	Up to 500 VAC
Retains all settings without power	Yes, all saved in Non-volatile EEPROM
Standby power consumption	< 1 watt
Safety Approved	ETL (Intertek Testing Services)
Certifications	FCC, IC Canada

Troubleshooting

NOTE: Unless they have been unlinked, INSTEON devices that had been previously linked to Keypad Dimmer Dual-Band will still respond to button presses, even after a factory reset. The reason is that the INSTEON devices themselves have not been unlinked from Keypad Dimmer Dual-Band. See Removing Keypad Button from a Scene as a Controller.

Problem	Possible Cause	Solution
The LEDs on Keypad are not turning on at all and won't control my light.	Keypad is not getting power.	Make sure the circuit breaker is turned on.
		Make sure the air gap (Set button) is not pulled out.
		Check junction box wires to ensure all connections are tight and no bare wires are exposed.
		Check the light fixture to ensure all connections are tight and no bare wires are exposed.
The switch I'm replacing only has two wires.	Keypad needs a Neutral wire in order to operate.	Look in the rear of the junction box for a group of white wires all tied together with a wire nut. Those are the Neutral wires. Connect the white Keypad wire there.
Keypad is not receiving signals from INSTEON or X10 Controllers.	Keypad and the Controller are on opposite power line phases.	Make sure two Access Points (range extenders) or other dual-band INSTEON products are properly installed to bridge the two power line phases.
	The Controller is plugged into a power strip.	Power line signals can't travel through power filters. Plugging the controller directly into a wall outlet works best.
	Other modules are loading down the signal.	Move the other modules or the Controller to another outlet.
Keypad is not Linking to or working with an INSTEON Controller or device.	The INSTEON signal may be too weak.	Add new INSTEON devices or move around existing INSTEON devices. All INSTEON devices act as INSTEON network repeaters.
Keypad doesn't always respond to an INSTEON Controller.	The INSTEON Controller may have been reset without first Unlinking Keypad from it.	Re-link Keypad to the INSTEON Controller.
The light turned on by itself.	Another Controller, a timer, or stray X10 signals triggered Keypad.	Install a power line signal blocker in your home to keep X10 signals from neighboring homes from interfering. Consider not using Keypad in X10 mode.
		If the above doesn't work, perform a factory reset.
The controlled light does not appear to turn on or off right away.	The ramp rate may be set too slow.	Set a shorter ramp rate.
Keypad turns on, but not off, using another Controller.	The load is producing electrical noise that is interfering with the Keypad reception of power line signal.	Install a power line noise filter between the load and Keypad.
		Install additional INSTEON devices to boost the INSTEON signal.
		Increase the X10 signal strength with an INSTEON-compatible X10 booster to overcome the power line noise.
My light only turns off when I tap a button on Keypad, but I can brighten and dim it.	The On-Level may be set to fully-off or very dim.	Set a brighter On-Level.

When I try to turn on my light with another Controller, the light turns on, then back off.	Keypad may be set up with an INSTEON On-Level at a high brightness and an X10 Primary or scene address On-Level at a low brightness.	Remove the X10 Primary Address or X10 scene address from Keypad.
		Remove the X10 address from the button on your INSTEON Controller so it doesn't send both INSTEON and X10 commands.
When I press a button on Keypad, it takes a long time for other INSTEON devices it is controlling to respond.	You may have removed an INSTEON device that Keypad is trying to operate. Keypad is retrying the missing INSTEON device.	If the INSTEON device is still available, Unlink it from Keypad.
		Perform a factory reset. See
Keypad doesn't respond to X10 address A1 when I first set it up.	Unlike previous X10-only products, Keypad does not have an X10 Primary Address set up at the factory.	Set up an X10 Primary Address.
I'm having difficulty performing advanced X10 programming.	The X10 "MNOP" house and unit codes were sent in the wrong order.	Don’t hold down the buttons on your X10 controller too long, to avoid duplicate codes being sent.
The load is buzzing when on or dim.	The dimming component inside Keypad "chops" the power line sine wave to reduce the power.	The bulb filaments are vibrating. Use rough-service, 130-volt, or appliance grade bulbs to reduce the noise.
		Run Keypad in the "full-on" mode or switch to a non-dimming Keypad On/Off (relay) Switch.
Keypad does not respond at all	A surge or excessive noise on the power line may have caused the Keypad to unexpectedly stop responding.	Pull the Set button on Keypad all the way out for 10 seconds to air-gap it, then push it back in without pushing it all the way down.
		If the above doesn't work, perform a factory reset.
Keypad is getting warm to the touch.	It is normal for wall dimmers to get warm (but not hot).	Keypad will dissipate about 1 Watt per 100 Watts controlled. Using metal junction boxes, removing insulation around the outside of the box, or controlling a smaller load can help lessen the heat.
Keypad can turn off my Responder, but nothing happens when I send an ON command from Keypad.	Your Responder may be Linked at its off state.	Re-Link your Responder to Keypad, while the responding device is on.
My Controller can turn off Keypad, but Keypad does not turn on when I send an ON command from my Controller.	Keypad may be Linked at its off state.	Re-Link Keypad to your Controller, while the light is on.
After wiring in Keypad, the unit lets out a continuous beep.	Keypad is issuing an error beep because the unit is wired incorrectly.	Turn off the circuit breaker and try reinstalling Keypad. If you are still experiencing an error beep, consult an electrician to help you install Keypad.
Keypad trips the Arc Fault Circuit Interrupter (AFCI).	The AFCI might be too sensitive.	Replace your AFCI with a less sensitive brand or model from a hardware store with a customer-friendly return policy. Smarthome has conducted various tests and has found that Keypad modules do not trip when used with the following AFCI models: • GE 15 Amp Combination Arc Fault Breaker #THQL1115AFP2 • Murray 2-Pole Combination Type Arc Fault

		Circuit Interrupter #MP215AFCP
		Install power line noise filter between the output and the load.
	There might be loose connections within your home's wiring.	Consult an electrician to check the wiring in your home.

If you have tried these solutions, reviewed this Owner's Manual, and still cannot resolve an issue you are having with Keypad, please call: 866-243-8022

Certification and Warranty

Certification
This product has been thoroughly tested by Intertek Testing Services, a nationally recognized independent third-party testing laboratory. The North American ETL Listed mark signifies that the device has been tested to and has met the requirements of a widely recognized consensus of U.S. and Canadian device safety standards, that the manufacturing site has been audited, and that the manufacturer has agreed to a program of quarterly factory follow-up inspections to verify continued conformance.

FCC and Industry Canada Compliance Statement
This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS-210. 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.

Changes or modifications to this unit voids the user's authority to operate this product and the manufacturer's warranty
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 15B 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.

ETL / UL Warning (Safety Warning)
CAUTION: To reduce the risk of overheating and possible damage to other equipment, do not install this device to control a receptacle, a motor-operated appliance, a fluorescent lighting fixture, or a transformer-supplied appliance.
Gradateurs commandant une lampe a filament de tungstene – afin de reduire le risqué de surchauffe et la possibilite d'endommagement a d'autres materiels, ne pas installer pour commander une prise, un appareil a moteur, une lampe flourescente ou un appareil alimente par un transformateur.

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 INSTEON Support at 866-243-8022 with the Model # and Revision # of the device to receive an RMA# and send the product, along with all other required materials to:

INSTEON
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.