

SwitchLinc™ Dimmer
INSTEON® Remote Control Dimmer
100 - 277VAC, 50/60Hz
Owners Manual (Dual-Band)
(#2478D)



Shown above with optional custom etching and screwless wallplates (sold separately)

INSTEON

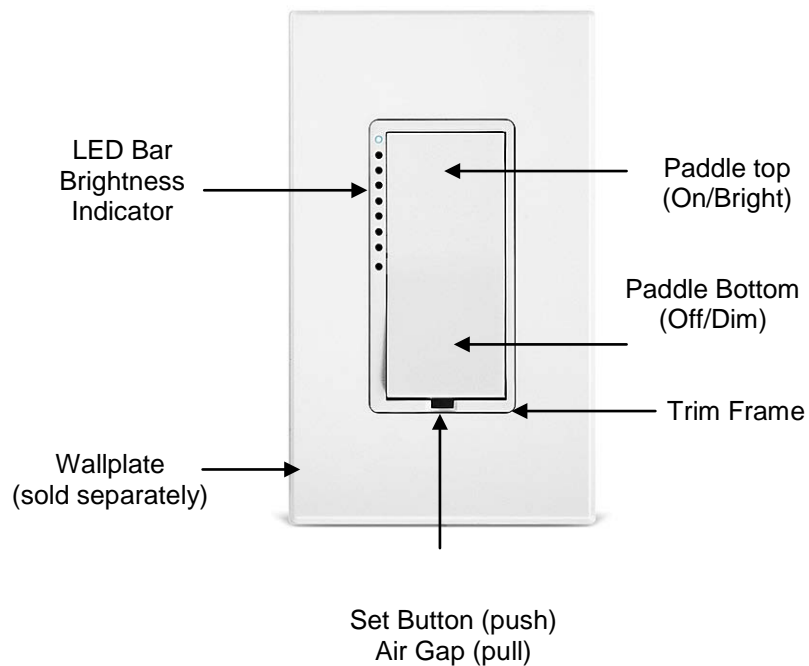
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About SwitchLinc 100 - 277VAC 50/60Hz Dimmer

Congratulations on purchasing the SwitchLinc Dimmer. This version of the popular SwitchLinc line of dimmers offers automatic 50/60Hz detection of the AC power frequency and flexible 100 - 277VAC support allowing operation in a variety of electrical environments.

Features & Benefits

- After installation, setup is easy – Add to Scenes with other INSTEON devices in minutes
- International-friendly 50/60Hz auto-detect and flexible 100 - 277VAC power support
- Controls all standard incandescent lamps, up to 600 watts
- Adjustable to 32 dim levels
- Adjustable on/off Ramp Rate speeds
- Paddle has true rocker action – top is on or bright, bottom is off or dim
- 9-level LED bar shows brightness of lights
- Status LED and beeper indicates INSTEON setup mode activity
- Status LED provides gentle nightlight when switch is off
- White LED bar color is changeable to green, blue, amber or red with optional kit
- Responds to commands from X10 controllers and sends X10 commands to X10 devices
- Wires in like a standard wall switch (but also requires a Neutral connection)
- Supports SwitchLinc "virtual" 3-way, 4-way circuits
- White paddle and trim frame is changeable to ivory, almond, black, brown or gray with optional kit
- Two-year warranty



What's in the box?

- SwitchLinc Dimmer
- Four wire nuts

- Quick-Start Guide

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 Electric 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 single-phase voltages between 100 – 277VAC, 50/60Hz., single phase. Attempting to use this product on non-approved power lines may have hazardous consequences.

Recommended installation practices:

- 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.
- 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.
- 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.

Identifying the Electrical Wires in your Home

- Line - usually Black, may also be called HOT, LIVE or Power, carries 100 - 277VAC electricity into the wall box
- Neutral - usually White commonly daisy chained from box to box usually appearing as a White wire bundle
- Load – usually Black, Blue, or Red (from a separate cable jacket)
- Ground - Bare wire or metal fixture (if grounded)

IMPORTANT!

- Each INSTEON product is assigned a unique INSTEON ID, which is printed on the product's label. Please take note for future reference
- If you have any difficulties or questions, consult an electrician. If you are not knowledgeable about, and comfortable with electrical circuitry, you should have a qualified electrician install the product for you.

Tools Needed

- Slotted screwdriver
- Wire cutter / stripper
- Phillips screwdriver
- Voltage Meter

Installing SwitchLinc – with 1 Switch

- 1) Turn off circuit breaker(s) or remove fuse(s) feeding wall box
- 2) Use a voltage meter to verify that power is off
- 3) Remove wallplate from the switch and unscrew switch you are replacing and gently pull out
- 4) Disconnect wires from switch¹
- 5) Turn breaker(s) back on
- 6) Use a voltage meter to identify Line and Load wires which connected to the switch
- 7) Identify Neutral and Ground wires
- 8) Turn breakers(s) back off
- 9) Connect wires as per Table A/ Fig. 1 (confirm firm attachment with no exposed wire)
- 10) Gently place SwitchLinc into wall box, orienting unit with the LED bar on left. Then, screw SwitchLinc into place.
- 11) Turn breaker(s) back on

SwitchLinc's LED bar and connected light will turn on

- 12) Verify SwitchLinc is working properly by tapping SwitchLinc's paddle turning light (load) on and off
- 13) Reinstall the wallplate

SwitchLinc Wire	Wall Box Wires
Bare copper	Ground (commonly Bare, Green wire or Green screw)
White	Neutral (commonly White)
Red	Load (Light, commonly Black)
Black	Line (100 – 277V to Ground)

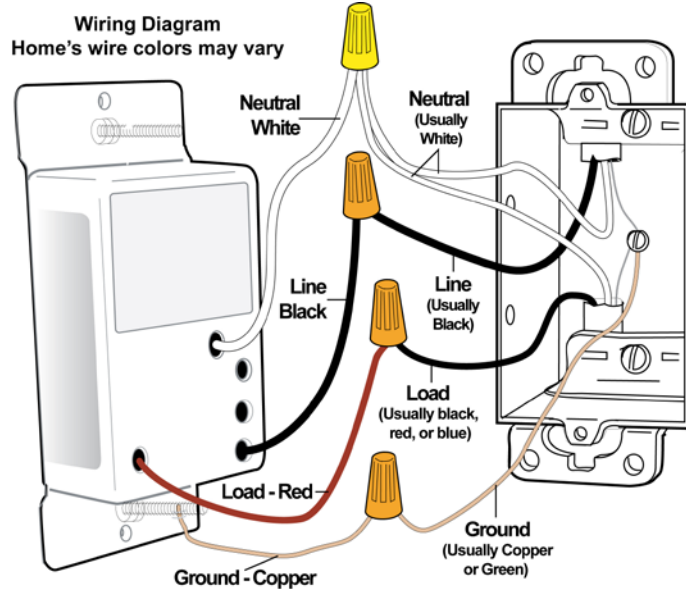


Fig 1

¹ If the wires cannot be detached by unscrewing them, cut the wires where they enter the switch, then strip 1/2" of insulation off the ends

Installation – Circuit with 2 Switches (3-way)

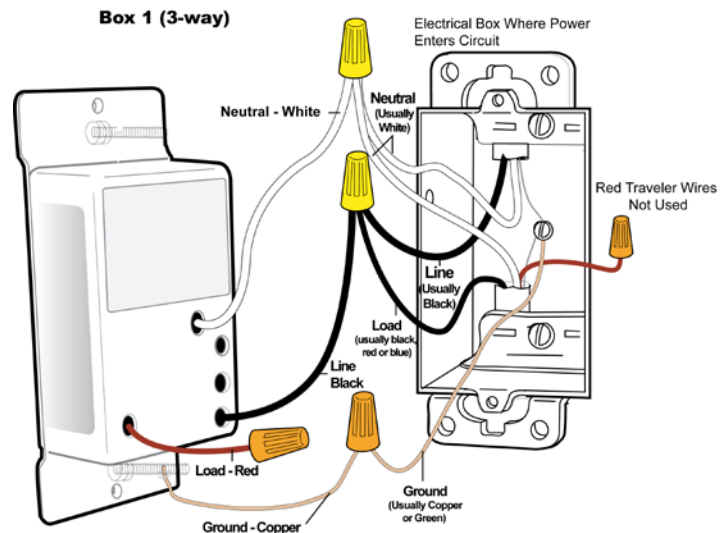
Circuits with 2 switches are called 3-way circuits. Both switches in a 3-way circuit need to be replaced by SwitchLincs (and/or KeypadLincs).

Note: 3-way circuits require a pair of wires called Travelers between joining wall boxes to operate. INSTEON switches, dimmers and keypads do not require both Traveler wires for 3-way circuits to function. Simply wire one to Line, Neutral and Load; the other(s) to Line and Neutral. Use one Traveler to share Line between boxes. Adding both SwitchLincs to a Scene creates a virtual 3-way circuit.

- 1) Turn off circuit breaker(s) and/or remove fuse(s) feeding wall boxes
- 2) Use a voltage meter to verify that power is off
- 3) Pull both switches from their wall boxes, each existing 3-way switch will have no less than 3 wires
- 4) Remove wires from existing switches
- 5) Make sure wires are safely separated from each other and turn breaker(s) back on
- 6) Using a voltage meter measure each wire to Ground in both boxes until you find the single wire supplying 100 - 277VAC (Line)
 - a. We will now refer to that location as box 1
 - b. The other box will have the Load wire. That will be box 2
- 7) Turn breaker(s) back off

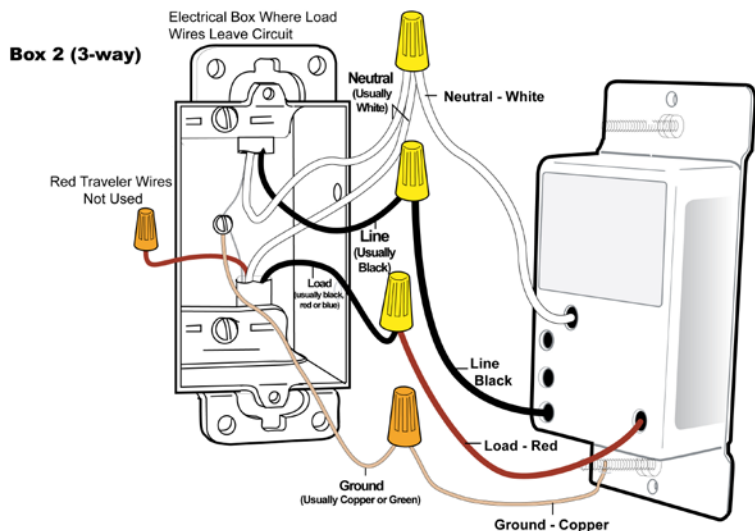
In Box 1 (Line box)

- 8) Connect bare Ground wire from the SwitchLinc to bare Ground wire or Ground screw in wall box
- 9) Connect White Neutral wire from SwitchLinc to Neutral wire(s) in wall box (usually white)
- 10) Using a wire nut, cap the Red wire from SwitchLinc
- 11) Connect Black wire from Switch Linc to 100 - 277VAC Line wire in wall box (usually Black) along with one Traveler wire running between boxes (preferably Black). Note color of Traveler you are using as this will carry Line voltage to box 2.
- 12) Cap unused Traveler



In Box 2 (Load box)

- 13) Connect bare Ground wire from SwitchLinc to bare Ground wire or Ground screw in wall box
- 14) Connect White Neutral wire from SwitchLinc to Neutral wire(s) in wall box (usually White)
- 15) Connect Red wire from SwitchLinc to Load wire (usually Black)
- 16) Connect Black wire from SwitchLinc to same color Traveler from box 1 carrying 100 - 277VAC Line (usually Black)
- 17) Cap unused Traveler wire
- 18) With the LED bar on the left, gently place both SwitchLincs into the junction boxes and screw in place
- 19) Turn breaker(s) On



SwitchLinc's LED bar and connected light will turn on
 Only SwitchLinc in box 2 will operate the Load until you synchronize Scenes to both
 SwitchLincs in next step

- 20) Add both SwitchLincs to a Scene as a Controller and Responder of each other (see [Synchronized Scenes](#))
- 21) Verify SwitchLinc(s) are working properly by tapping SwitchLinc's paddle turning light (load) on and off
- 22) Reinstall wallplates

Installation – Circuit with 3 or more Switches (3-way/4-way)

Circuits with 3 or more switches are called 3-way/4-way circuits. All switches in 3-way/4-way circuits need to be replaced by SwitchLincs (and/or KeypadLincs).

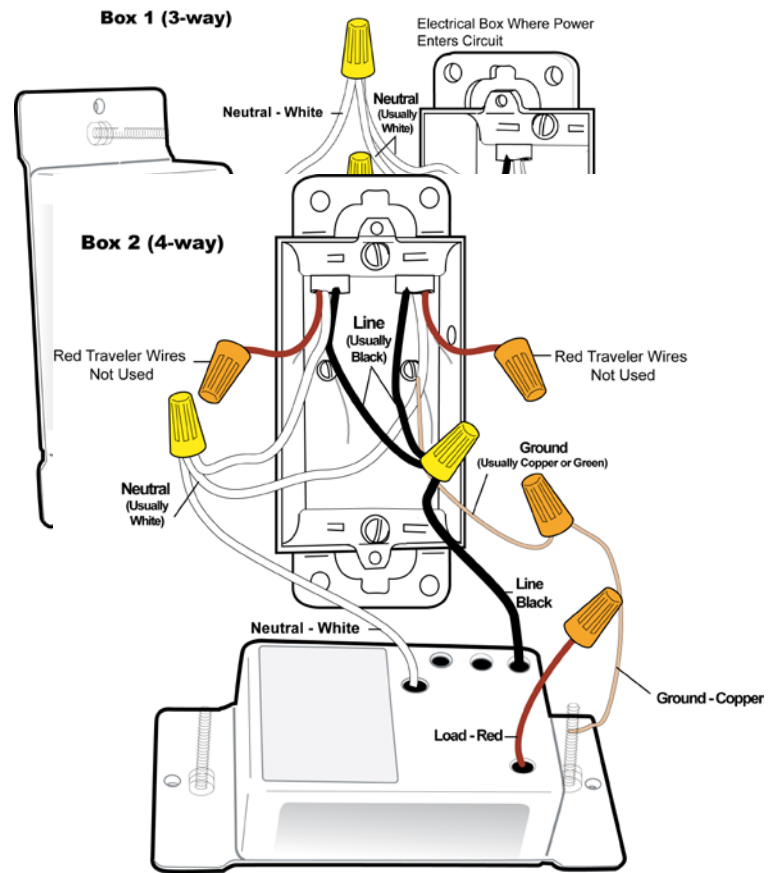
Note: 3-way/4-way circuits require a pair of wires called Travelers between joining wall boxes to operate. INSTEON switches, dimmers and keypads do not require both Traveler wires for 3-way/4-way circuits to function. Simply wire one to Line, Neutral and Load; the other(s) to Line and Neutral. Use one Traveler to share Line between boxes. Adding to a Scene creates a virtual 3-way/4-way circuit.

The following example shows three switches

- 1) Turn off circuit breaker(s) and/or remove fuse(s) feeding wall boxes
- 2) Use a voltage meter to verify that power is off
- 3) Pull all three switches from their wall boxes, each existing 3-way switch will have a minimum 3 wires; 4-way switches will have a minimum 4 wires
- 4) Remove wires from existing switches
- 5) Make sure wires are safely separated from each other and turn breaker(s) back on
- 6) Using a voltage meter measure each wire to Ground in all three boxes until you find the single wire supplying 100 - 277VAC (Line)
 - a. We will now refer to that location as box 1
 - b. The location having 2 sets of matching pairs of wires will be box 2 (e.g. 2 Reds and 2 Blacks, or other matching colors). These are 2 Travelers from box 1 and 2 Travelers leading to box 3.
 - c. The last box will have the Load wire, that will be box 3
- 7) Turn breaker(s) back off

In Box 1 (Line box)

- 8) Connect bare Ground wire from SwitchLinc to bare Ground wire or Ground screw in the wall box
- 9) Connect White Neutral wire from SwitchLinc to Neutral wire(s) in wall box (usually white)
- 10) Cap Red wire from SwitchLinc
- 11) Connect Black wire from SwitchLinc to 100 - 277VAC Line wire in wall box (usually Black) along with one Traveler wire running between boxes (preferably Black). Note color of Traveler you are using as this will carry Line voltage to box 2.
- 12) Cap unused Traveler wire



In Box 2 (Traveler box)

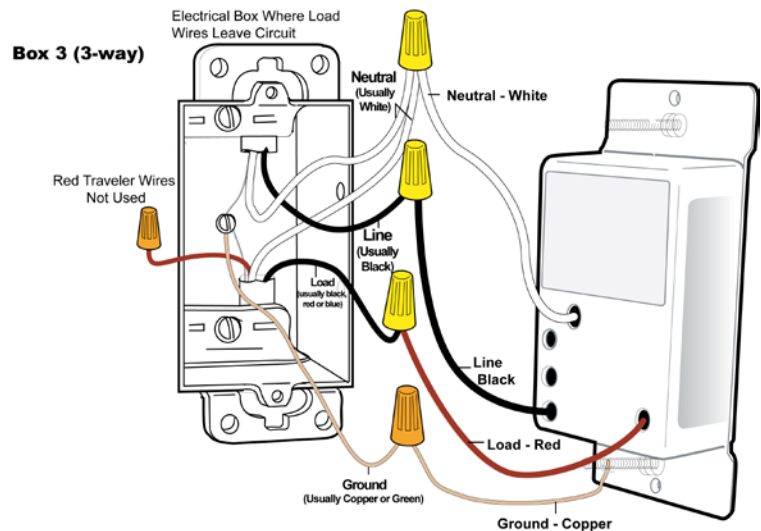
- 13) Connect bare Ground wire from SwitchLinc to bare Ground wire or Ground screw in the wall box
- 14) Connect White Neutral wire from SwitchLinc to Neutral wire(s) in wall box (usually White)¹
- 15) Cap Red wire from the SwitchLinc
- 16) Connect the Black wire from SwitchLinc to same color Traveler from box 1 that you connected to 100 - 277VAC Line along with the same color Traveler wires leading to box 3
- 17) Cap the last unused Traveler wire(s)

In Box 3 (Load box)

- 18) Connect bare Ground wire from SwitchLinc to bare Ground wire or Ground screw in wall box
- 19) Connect White Neutral wire from SwitchLinc to Neutral wire(s) in wall box (usually White)
- 20) Connect Red wire from SwitchLinc to Load wire (usually Black)
- 21) Connect Black wire from SwitchLinc to the 100 - 277VAC Line Traveler from box 2 (Line Traveled from box 1 through 2 into 3, usually Black)
- 22) Cap unused Traveler wire
- 23) With the LED bar on the left, gently place both SwitchLincs into the junction boxes and screw in place
- 24) Turn breaker(s) On

*SwitchLincs' LED bar and connected light will turn on
Only SwitchLinc in box 3 will operate the Load until you synchronize Scenes on all 3 SwitchLincs in next step*

- 25) Add each SwitchLinc to a Scene as a Controller and Responder of each other (see [Synchronized Scenes](#))
- 26) Verify SwitchLincs are working by turning the light on and off from all three SwitchLincs
- 27) Reinstall wallplates

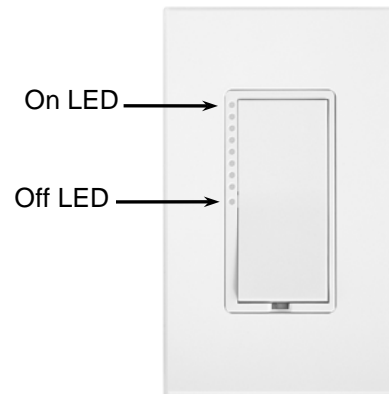


¹ If Neutral is not available in this box; use other unused Traveler from box 1 to carry Neutral to box 2. Label and mark any differently colored wire being connected to Neutral with a piece of white tape to flag it as Neutral.

Using SwitchLinc

LEDs

LED	Status	Meaning
Bottom LED of Brightness Bar	On	SwitchLinc powered up load off
LEDs on Brightness Bar	On	Level of load brightness load on



- On LED (White)
 - Illuminated when SwitchLinc is On
- Off LED (White)
 - Illuminated when SwitchLinc is Off

Using the Paddle

Paddle	Tap	Double-tap	Press & hold begin	Press & hold end
Top	Turn On Connected load ramps to set brightness & Scene Responders	Connected load quickly comes On to full bright & Scene Responders	Connected load gradually brightens & start brightening Scene Responders	Connected load & Scene Responders stop brightening
Bottom	Turn Off Connected load ramps to full Off & Scene Responders	Connected load quickly turns Off & Scene Responders	Connected load gradually dims & Start dimming Scene Responders	Connected load & Scene Responders stops dimming

- Tap paddle top to make load turn on at local ramp rate, from present brightness to local On-level brightness
- Tap paddle bottom to make load turn off at local ramp rate, from present brightness to full Off
- Double-tap paddle top to make load go full On quickly
- Double-tap paddle bottom to make load go full Off quickly
- Press & hold paddle top to gradually brighten load from present brightness to full On
- Press & hold paddle bottom to gradually dim load from present brightness to full Off

Button Tap / Press & Holds

Paddle	Tap	Double-Tap	Press & Hold
Top	Ramp to On-Level	Fast On	Brighten
Bottom	Ramp to Off	Fast Off	Dim

Local On-Level

The Local On-Level is the brightness that the light(s) physically wired to SwitchLinc will come on at when turned on locally. The On-Level is adjustable from off to 100% brightness. The default is 100%.

- 1) Use either the local buttons on your dimmer module or an INSTEON Controller to adjust the light to the desired brightness
 - a. Press & hold the On button on the dimmer or Controller to brighten the light. Release at the desired brightness.
 - b. Press & hold the Off button on the dimmer or Controller to dim the light. Release at the desired brightness.

- 2) Once the desired brightness has been achieved, tap the Set button on your dimmer once
SwitchLinc will (Beep)
 - a. The local On-Level has now been set. If you would like to set up a Controller to set your dimmer to the above On-Level as well, proceed to step 3.
 - b. If you do not wish to set up the On-Level to an INSTEON Controller, skip to step 4.
- 3) Choose the desired button on your INSTEON Controller and Add a Scene to your dimmer (see the Controller's Owner's Manual for Add a Scene instructions)
- 4) Test the On-Level settings by pressing the On/Off buttons on your dimmer and Controller you just Added a Scene to

NOTE: If the dimmer module is blinking its Status LED, you held the Set button down too long. Holding down the Set button for 3 seconds is an alternate way to place the INSTEON dimmer into Scene Mode. Scene Mode will time out after 4 minutes of inactivity. To manually exit Scene Mode, tap top or bottom paddle.

INSTEON Programming

INSTEON remote control is done using Scenes. Scenes allow you to instantly “recall” favorite lighting and appliance settings at the touch of a button (or in response to central control or even a sensor). Each Scene has at least one Controller and at least one Responder. Simple Scenes can be setup using the instructions below. Software is recommended for setup of larger Scenes.

Add SwitchLinc to a Scene as a Responder

- 1) Press & hold Scene Controller button until it beeps¹
Controller's LED will blink
- 2) Tap SwitchLinc On
Load will turn on
- 3) Press & hold SwitchLinc's Set button until it double-beeps
SwitchLinc will (Beep)-(Beep)
Controller's LED will stop blinking and it will (Beep)-(Beep)²
- 4) Confirm Scene addition was successful by tapping On then Off on Controller's Scene button
SwitchLinc will respond appropriately

Remove SwitchLinc from a Scene as a Responder

If you want to remove SwitchLinc from a Scene(s) as a Responder follow instructions below. Whenever possible, use software for managing Scene memberships.

Note: If you choose to remove SwitchLinc from use, it is important that you remove Scene memberships from all Controllers. Otherwise, Controllers will retry commands repetitively, creating network delays. Follow the instructions below for each Scene Controller that SwitchLinc is a member of.

- 1) Press & hold Controller's Scene button until Controller beeps³
Controller's LED will blink
- 2) Press & hold Scene button until Controller beeps again
Controller's LED will continue blinking
- 3) Tap SwitchLinc On
Load will turn on
- 4) Press & hold Set button on SwitchLinc until it double-beeps
SwitchLinc's LED will flash once
Controller's LED stops blinking
- 5) Confirm Scene removal was successful by tapping Controller button with the Scene you just removed
SwitchLinc will no longer respond

¹ If the Controller does not have a beeper, wait until its LED begins blinking

² Most models

³ For devices without beepers hold until its LED begins blinking (this may take 10+ seconds)

Add SwitchLinc to a Scene as a Controller

Follow the steps below to control a Scene (one or more INSTEON devices) from a SwitchLinc paddle

- 1) Press & hold SwitchLinc's Set button until it beeps
SwitchLinc's LED will blink
- 2) Adjust the Scene Responder(s) to the "state" you want when Scene is activated from SwitchLinc (e.g., 50%, 25% or even OFF)¹
- 3) Press & hold Responder's Set button until it double-beeps (or until its LED/Load flashes)
SwitchLinc will (Beep)-(Beep) and its LED will stop blinking²
Responder's LED will stop blinking and it may (Beep)-(Beep)³
- 5) Confirm Scene addition was successful by tapping SwitchLinc's paddle on and off
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 Scene Responders](#))

Remove SwitchLinc from a Scene as a Controller

If you want to remove SwitchLinc from a Scene(s) as a Controller follow instructions below. Whenever possible, use software for managing Scene memberships.

Note: If you choose to remove SwitchLinc from use, it is important that you remove Scene memberships from all Responders. Follow the instructions below for each Responder that SwitchLinc is a member of.

- 1) Press & hold SwitchLinc's Set button until it beeps
SwitchLinc's LED will blink
- 2) Press & hold SwitchLinc's Set button until it beeps again
SwitchLinc's LED will begin blinking
- 3) Press & hold Responder's Set button until it double-beeps (or LED blinks)
SwitchLinc will (Beep)-(Beep) and its LED will stop blinking
- 4) Confirm that Scene removal was successful by tapping SwitchLinc's paddle on and off
Responder will not respond
- 5) If you wish to remove multiple Responders from SwitchLinc, repeat steps 1-5 for each additional Responder or (see [Remove Multiple Scene Responders](#))

LED Brightness

- 1) Press & hold SwitchLinc's Set button until it beeps (3 seconds)
SwitchLinc's LED will begin blinking
- 2) Press & hold Set button until it beeps again (3 seconds)
SwitchLinc's LED will continue blinking
- 3) Press & hold Set button until it beeps a third time (3 seconds)
SwitchLinc's LED will stop blinking
SwitchLinc's Status LED will illuminate at current LED brightness level
- 4) Use the paddle to brighten or dim the LEDs to desired brightness
 - a. Press & hold paddle top to brighten
 - b. Press & hold paddle bottom to dim (fully OFF for dimmest)
- 5) Once you have reached the desired brightness for your LEDs, tap Set button once
SwitchLinc will beep
LED's now set to new brightness level

Power Restore

SwitchLinc 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, SwitchLinc will return its connected load and all LEDs to their states prior to power outage.

¹ If the Responder is a multi-Scene device such as a KeypadLinc, tap the Scene button you wish to control until its LED is in the desired Scene state (on or off)

² If either the SwitchLinc or Responders LED continues to blink, the addition failed. Tap the device's Set button until LED stops blinking and try again.

³ If either the SwitchLinc or Responders LED continues to blink, the addition failed. Tap the device's Set button until LED stops blinking and try again.

X10 Programming

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

<http://www.smarthome.com/insteon-x10-programming.html>

Advanced Features

Add Multiple Scene Responders (formerly “Multi-Linking Mode”)

- 1) Press & hold SwitchLinc’s Set Button until it beeps
SwitchLinc’s LED will blink
- 2) Tap SwitchLinc’s Set Button
LED will continue blinking
- 3) For each Responder you are adding
 - a. Adjust the Responder to desired Scene state
 - b. Press & hold Responder’s Set button until it beeps (or LED flashes)
SwitchLinc will (Beep)-(Beep)
- 4) After all Responders have been added, tap SwitchLinc’s Set Button
SwitchLinc’s LED will stop blinking
- 5) Confirm Scene addition was successful by tapping SwitchLinc’s paddle on and off
Responder will toggle between the Scene’s on level and off

Remove Multiple Scene Responders (formerly “Multi-Unlinking Mode”)

- 1) Press & hold SwitchLinc’s Set Button until it beeps
Switchlinc’s LED will blink
- 2) Press & hold SwitchLinc’s Set Button again until it beeps again
LED will continue blinking
- 3) Tap SwitchLinc’s Set Button
LED will continue blinking
- 4) For each Responder you are removing
 - a. Tap Scene button
 - b. Press & hold Responder’s Set button until it beeps (or LED flashes)
- 5) After all Responders have been removed, Tap SwitchLinc’s Set Button
SwitchLinc’s LED will stop blinking
- 6) Confirm Scene removal was successful by tapping SwitchLinc’s paddle on and off
All the Responders removed will not respond

Synchronized Scenes formerly “Cross-Linking” (2 switches; 3-way) (3 or more; 3-way/4-way)

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

Synchronize Scenes with 2 SwitchLincs and identify them as A and B

- 1) Turn both switches/dimmers on – to the desired (and same) Scene level
- 2) Press & hold Switch A’s Set button until it beeps (or LED blinks)
Switch A’s LED will blink
- 3) Press & hold Switch B’s Set button until it double-beeps (or LED flashes)
Switch B will (Beep)-(Beep) and its LED will flash once
Switch A will (Beep)-(Beep) and its LED will stop blinking
- 4) Press & hold Switch B’s Set button until it beeps (or LED blinks)
Switch B’s LED will blink
- 5) Press & hold Switch A’s Set button until it double-beeps (or LED flashes)
Switch A will (Beep)-(Beep) and its LED will flash once
Switch B will (Beep)-(Beep) and its LED will stop blinking
- 6) Test the group by controlling the Load from Switch A and then Switch B
The Load, Switch A’s status LED(s) and Switch B’s status LED(s) will all remain in synch

Synchronized Scene with 4 members (3-way/4-way)

Software is recommended, however, the following steps, when carefully followed, will also work. For our example we will Synchronize SwitchLincs and identify them as switches A, B, C and D.

- 1) Turn all switches on – to the desired (and same) Scene level
 - a. Press & hold Switch A's Set button until it beeps (or LED blinks)
Switch A's LED will blink
 - b. Tap Switch A's Set button
Switch A's LED will continue blinking
 - c. For switches B, C and D, press & hold the Set button on each, one at a time, until it double-beeps (or LED flashes)
Switch B, C and D will (Beep)-(Beep) and its LED will flash once
 - d. Tap Switch A's Set button
Switches B, C, and D are now Responders of and Synchronized to switch A's setting as a Scene Controller
- 2) Return to Step 1 above, turn all switches on – to the desired (and same) Scene level
- 3) Follow steps a. and b. above substituting with switch B to start Synchronized Scenes
- 4) Follow step c. for switches A, C and D
- 5) Follow step d. above substituting with switch B to end program

- 6) Return to Step 1 above, turn all switches on – to the desired (and same) Scene level
- 7) Follow steps a. and b. above substituting with switch C to start Synchronized Scenes
- 8) Follow step c. for switches A, B and D
- 9) Follow step d. above substituting with switch C to end program

- 10) Return to Step 1 above, turn all switches on – to the desired (and same) Scene level
- 11) Follow steps a. and b. above substituting with switch D to start Synchronized Scenes
- 12) Follow step c. for switches A, B and C
- 13) Follow step d. above substituting with switch D to end program

All 4 switches are now set as Scene Controllers and each of the remaining switches in the group are Synchronized as Responders

Air Gap

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

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

Note: If you press Set button in too far, you might inadvertently reset the INSTEON device to its factory default settings. Make sure to only push the Set button down so that it is flush with trim frame.

Factory Reset

Factory Reset clears all user settings from SwitchLinc including INSTEON Scenes, On-Levels, Ramp Rates, X10 addresses, etc.

- 1) Pull Set button out (creating an Air Gap)
- 2) Wait 10 Seconds
- 3) Press the Set Button in as far as you can & hold
SwitchLinc will (Beep)
- 4) Release the Set button
Device's embedded software will re-write all settings to factory defaults
A couple of seconds will pass
SwitchLinc will (Beep)-(Beep)
LEDs will return to normal brightness
SwitchLinc returns to Ready Mode
Connected load will turn on

Change Paddle and LED Colors

You can swap out the included white LEDs and/or front paddle and trim frame assembly with a color-change kit before or after SwitchLinc is installed. For more information, see the [Accessories page on INSTEON.com](#).

Local Ramp Rate (software recommended)

Setting the Ramp Rate¹

Local Ramp Rate is the time it takes for SwitchLinc(s) to go from Off to 100% brightness

The default is 0.5 seconds

Local-Ramp-Rate is adjustable from 0.1 seconds to 8 minutes

(0.1- 9 seconds using the instructions below or up to 8 minutes using software)

NOTE: Setting the Ramp Rate does not change/affect the On-Level brightness.

Setting Ramp Rate is done using brightness level as an indicator for how fast SwitchLinc should ramp.

- a. Use the Up / Down paddle on SwitchLinc to set brightness
 - Set Brighter level for a faster Ramp Rate
 - 100% corresponds to a 0.1-second Ramp Rate (fast Ramp Rate)
 - Set Dimmer for a slower Ramp Rate
 - Full-off corresponds to a 9-second Ramp Rate (slow Ramp Rate)

The following table gives the approximate relationship between the brightness you set in this step and the Ramp Rate you get.

	Brightness Level	Ramp Rate
1) Adjust the connected light(s) to brightness corresponding to desired Ramp Rate	Full Bright	.25 Seconds (Fast)
2) Double-tap Set button on your SwitchLinc <i>SwitchLinc will (Beep)</i>	Various levels between	
3) Test Ramp Rate settings by tapping On/Off paddle on your SwitchLinc or Controller <i>Connected light(s) will ramp up and down at the new rate</i>		
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	Half Bright	2 Seconds (Med)
Note:	Various levels between	
<ol style="list-style-type: none"> a. Software allows you to set on-levels and Ramp Rates exactly as desired and consistently around the house b. Ramp Rates can be extended up to 8 minutes via home automation software 		
	Full Off	9 Seconds (Slow)

¹ Setting the Ramp Rate does not change or affect the on-level brightness

Additional Resources

Find home automation solutions, helpful tips, interactive demos, videos, user forums, and more at the Smarthome Learning Center: www.smarthome.com/learningcenter.html

Optional Accessories

Paddle Color Change Kit	http://www.smarthome.com/_/SwitchLinc/SwitchLinc_Paddle_Change_Kits/_/2vh/2wL/nav.aspx
LED Color Change Kit	http://www.smarthome.com/_/SwitchLinc/SwitchLinc_LED_Change_Kits/_/2vh/2wN/nav.aspx
Custom Etched Paddles	http://www.smarthome.com/_/SwitchLinc/SwitchLinc_Custom_Etching/_/2vh/2wP/nav.aspx

Beeper Behavior

The SwitchLinc features a built-in beeper which aids in programming and can also be used as an indicator via compatible software controllers. Here are the different beeping behaviors and what they mean:

- Single Beep: Transition from one setup mode to another
- Double Beep: Successful Scene addition or removal
- Continuous beeps for 3 seconds: Unsuccessful Scene management or 4 minute setup timeout

Blink LED on INSTEON Traffic

This feature can be enabled (and subsequently disabled) via compatible software packages.

Air Gap

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

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

Note: If you press the Set button in and hold it down for more than 3 seconds, you might inadvertently start the reset routine (see below). Make sure to only push Set button down so that it is flush with the trim frame.

Factory Reset

Factory Reset clears all user settings from SwitchLinc including INSTEON Scenes, On-Levels, Ramp Rates, X10 addresses, etc.

- 1) If possible, remove all scene memberships prior to performing the factory reset
- 2) Pull Air Gap out
- 3) Wait 10 seconds
- 4) Push the Set button in as far as you can and hold
SwitchLinc will emit a long ((((((Beep))))))
- 5) Continue pressing the Set button until after the beep stops
- 6) Release the Set button
SwitchLinc bottom LED will turn on solid and then turn off

After a few seconds, SwitchLinc will **(Beep)-(Beep)**
SwitchLinc will turn load on full bright

Specifications

General		
Product Name	SwitchLinc Dimmer - INSTEON Remote Control Dimmer 100 - 277VAC 50/60Hz (Dual-Band)	
Brand	Smarthome	
Manufacturer Product Number	2478D (White)	
UPC	2478D: 813922012231	
FCC ID	SBP2477D	
Patent Number	7,345,998 US, International Patents Granted and Pending	
Warranty	2 Years, Limited	
INSTEON		
INSTEON ID	1	
INSTEON	400 responder groups & 1 controller group	
Maximum Scene Memberships	400 (Combined Controller + Responder)	
Brightness Levels	32 (256 with software)	
Scene Commands Supported as Controller	On	Off
	Press & Hold Bright	Press & Hold Dim
	Fast On	Fast Off
Scene Commands Supported as Responder	On	Off
	Press & Hold Bright	Press & Hold Dim
	Incremental Bright	Incremental Dim
	Fast On	Fast Off
Software Configurable	Yes, Always	
RF Range	100' Open air	
X10 Support	Yes	
INSTEON Device Category	0x01 Dimmable Lighting Control	
INSTEON Device Subcategory	0x31	
Mechanical		
Mounting	Standard, single gang wall box	
Wires	3, 16 gauge, 1 stranded copper wire	
Wires	Black - Hot	
	White - Neutral	
	Red - Load	
	Bare Copper - Ground	

Case Color	Available in White, Ivory, Almond
Set Button	1, clear
Plastic	UV Stabilized Polycarbonate
Beeper	Yes
LED	White
Dimensions	4.1" H x 1.8" W x 1.2" D
Weight	3.6oz
Operating Environment	Indoors
Operating Temperature Range	0 - 104 degrees Fahrenheit (-18 – 40 degrees Celsius)
Operating Humidity Range	0-90% relative humidity, non-condensing
Storage conditions	4F to +158F (-20 – 70 degrees Celsius)
Electrical	
Voltage	100 - 277VAC (+/- 10%)
Frequency	50-60Hz (+/- 5%) Auto Detect
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

Problem	Possible Cause	Solution
LED won't come On	SwitchLinc not getting power	Make sure circuit breaker is on
		Check the junction box wires to ensure all connections are tight and no bare wires are exposed
		Check that a standard incandescent bulb is installed and is rated for 30-watts
SwitchLinc won't Add to Scene as a Responder	The Controller may have dropped out of Add to a Scene mode, or Added another device	Try Adding SwitchLinc to the Controller again
	The INSTEON signal may not be getting to the "vicinity" of SwitchLinc	Make sure phases are bridged, add additional INSTEON devices and/or move around existing INSTEON devices
	Controller is a powerline only device (SwitchLinc 2-Wire is RF only)	You'll need to add a Dual-Band INSTEON device to bridge between powerline only and RF only devices

The Controller turns SwitchLinc Off, but not On	Ramp Rate may be extremely slow	Re-Add to Controller with fast Ramp Rate (see Local Ramp Rate)
	SwitchLinc may be Added to the Scene in the Off state	Turn on the light and then re-Add SwitchLinc to the Controller
SwitchLinc is taking a long time to respond to a Controller	The Controller may be sending commands to a different Responder that is no longer in use. Commands for the unused Responder are being resent and slowing down communication signals to SwitchLinc.	Remove from the Scene any unused Responders from the Controller HINT: If you are using home automation software, you can easily check and eliminate unnecessary Scene Memberships
		If the above doesn't work, perform a factory reset on the Controller
The load turned on by itself	Another Controller or a timer could have triggered SwitchLinc	Monitor for recurrence and remove device if you can determine what it is. If necessary perform a factory reset.
The load doesn't appear to turn on right away	The Ramp Rate may be set too slow	Set a faster Ramp Rate (see Local Ramp Rate)
SwitchLinc is locked up	A surge on the powerline may have glitched it	Remove power to SwitchLinc by pulling out the Air Gap for ten seconds, if that doesn't work, perform a factory reset
The lights flicker when on and the SwitchLinc repeatedly turns the load off and on	The SwitchLinc is not getting enough power from the light bulb. The SwitchLinc needs to 'steal' some of the bulb's wattage for powering its circuits.	Change the light bulb to a standard incandescent bulb of at least 30 watts. You can always set the brightness level to some lower level and still have the effect of a small-wattage bulb.

If you have tried these solutions, reviewed this Owner's Manual, and still cannot resolve an issue you are having with SwitchLinc, please call: 800-762-7845

Certification and Warranty

Certification

This product has been thoroughly tested by Intertek Testing Services (ETL), 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 & Industry Canada Compliance Statement

This device complies with FCC Rules Part 15C and Industry Canada RSS-210 (Rev. 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 présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même 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 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 à filament de tungstène – afin de réduire le risque de surchauffe et la possibilité d'endommagement à d'autres matériels, ne pas installer pour commander une prise, un appareil à moteur, une lampe fluorescente ou un appareil alimenté 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 the INSTEON 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.

U.S Patent No. 7,345,998, International patents granted and pending
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