SwitchLinc™ Dimmer

INSTEON® Remote Control Dimmer Switch
Owner's Manual (rev 5.0+)
(**#2476Dxxx**)

# SwitchLinc Dimmer – Features and Benefits

Congratulations on purchasing the high-quality INSTEON SwitchLinc Dimmer Switch. With its elegant look, smooth touch and stylish LED bar, you can not only control the lights you wire to it, but you can add remote control to all kinds of other INSTEON and X10 devices in your home to match your lifestyle. Besides controlling other devices, SwitchLinc itself can be remotely operated from other INSTEON controllers, including other SwitchLinc modules.

Features

- Quick setup links to other INSTEON devices in minutes
- Controls all incandescent lights up to 600 watts
- Integrated dimmer with 32 dim levels and 4 ramp rates
- Rocker paddle has tap (on/off) and press-and-hold (brighten/dim) actions
- LED bar indicates light brightness level and acts as a gentle nightlight when light is off
- Setup state stored in non-volatile memory and preserved through power outages
- Swap out default white LED bar with optional green, blue, amber or red LED kit
- Change paddle and trim frame colors with optional ivory, almond, black, brown or gray kits
- Wires in like a standard wall switch (neutral connection required)
- Supports virtual 3-, 4- or more-way circuits with multiple SwitchLinc modules
- X10 compatible
- Two-year warranty
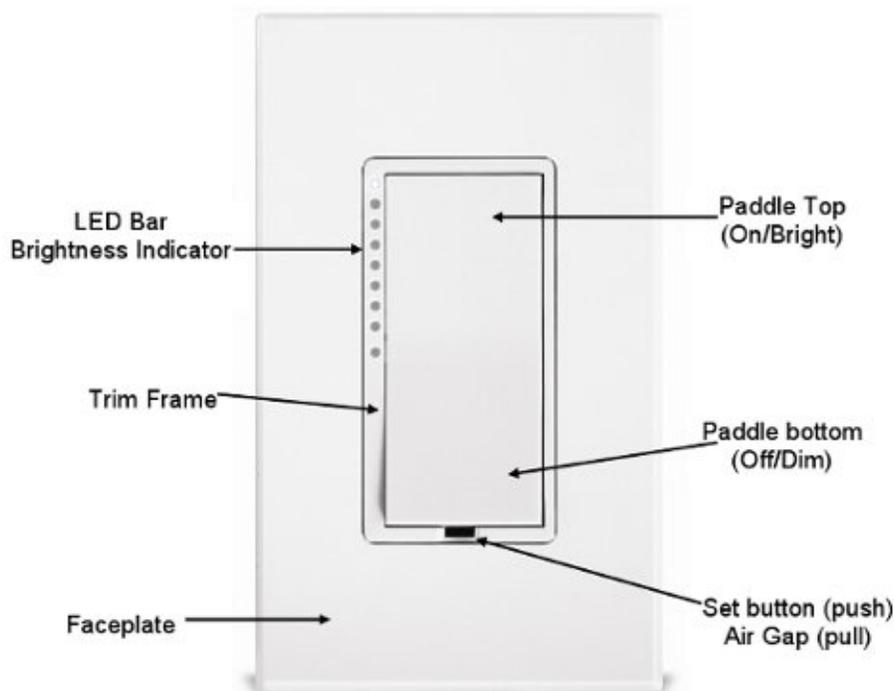
What's in the Box?

- SwitchLinc Dimmer
- Quick Start Guide
- Two (2) mounting screws
- Four (4) wire nuts

Installing SwitchLinc

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 120V 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.
- Each INSTEON product is assigned a unique INSTEON I.D., 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.

Identifying the Electrical Wires in Your Home

- line – carries 120VAC electricity into the wall box, may also be called hot, live or power, commonly black
- neutral – returns 120VAC to power company, commonly white and in a multi-wire bundle
- load – connects to light/load device, commonly black and in a separate cable jacket
- ground – connection to electrical ground, commonly a bare wire, a green wire or a screw on a metal box

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

Tools Needed

- Flathead screwdriver
- Wire cutter/stripper
- Phillips screwdriver
- Voltage meter

Installing SwitchLinc in a Typical 2-Way Circuit

1) At the circuit breaker or fuse panel, disable the circuit supplying power to the switch
2) Remove the faceplate from the existing switch, then unscrew the switch and pull it out from the wall box
3) Disconnect the wires from the switch you are replacing and ensure you have 1/2" of bare wire on the ends
4) Enable power to the switch from the circuit breaker or fuse panel, then use a line voltage meter to correctly identify the line, load, neutral and ground wires. Turn the breaker off again. (Refer to wiring diagram below to properly connect your wires to the INSTEON device.)
   Note: Mechanical switches don't utilize neutral wires, but they are usually available in the back of the switch box

5) Ensure that all wire connectors are firmly attached and that there is no exposed copper except for the ground wire
6) Orient SwitchLinc with the LED bar at the left, gently place it into the wall box and screw it into place
7) Enable power to the switch from the circuit breaker or fuse panel
8) Test that SwitchLinc is working properly by using the paddle to turn the light on and off
9) Reinstall the faceplate

Wiring Diagram
Home's wire colors may vary

Neutral White — Neutral (Usually White)
Line Black — Line (Usually Black)
Load (Usually black, red, or blue)
Load - Red
Ground - Copper — Ground (Usually Copper or Green)
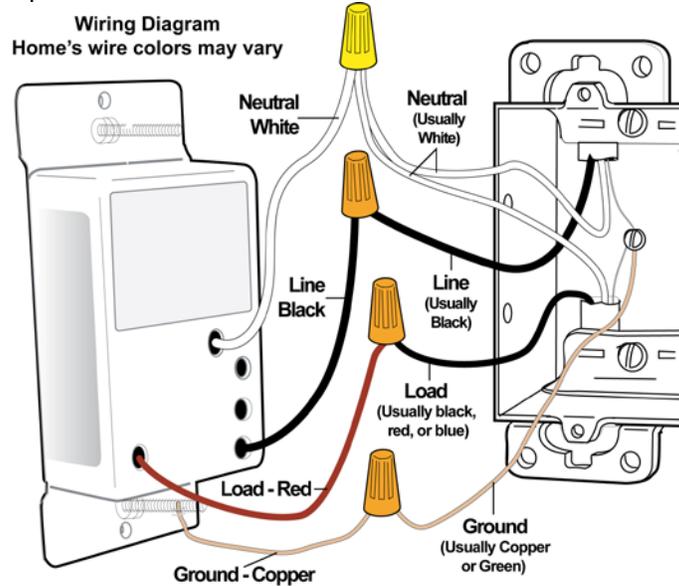
Note: the neutral wire will not normally be connected to the switch you are replacing. If there is no neutral wire in the box, consult an electrician or call the INSTEON Support line at 1-800-762-7845.

Understanding Multi-Way Circuits

If more than one switch controls a single set of lights (or load), the switches are part of a multi-way circuit. A 3-way uses two switches to control one load, a 4-way circuit uses three switches and so on. Most homes have one or more 3-way circuits, such as two switches located on opposite ends of hallways or at two different entrances to a room. Circuits that are 4- or more-way are less common. Here is how a typical wired-in 3-way circuit (with two switches) works:

Switch 1
Line [Black]
Traveler 1 [Red or Blue]
Traveler 2 [Black]
Switch 2
Load [Red]
Neutral [White]
Load
Neutral [White]
Main Panel
120 VAC

Note: The wire colors indicated are the usual colors and may differ in some homes.

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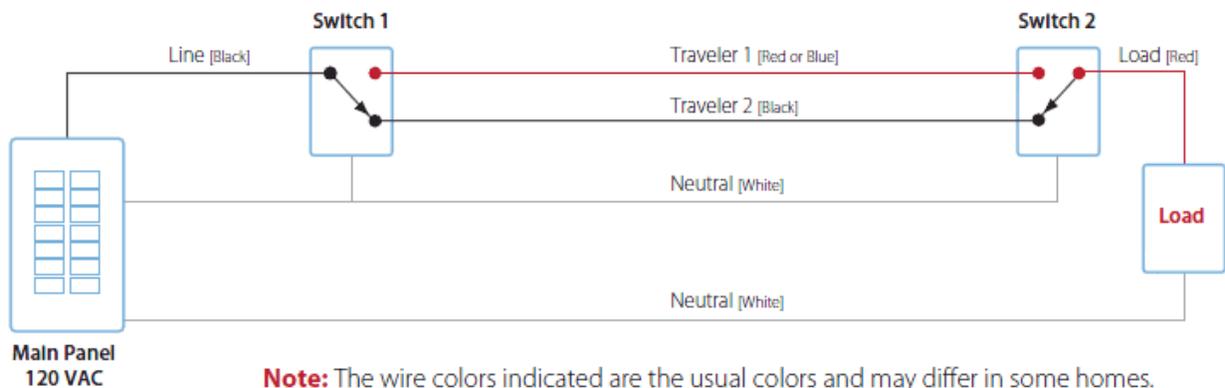
A wired-in 4- or more-way circuit (with three or more switches) has additional switches added in the middle of the circuit. In the diagram below, the additional switch (Switch 3+) is shown in two different positions, since wiring can vary from home to home.
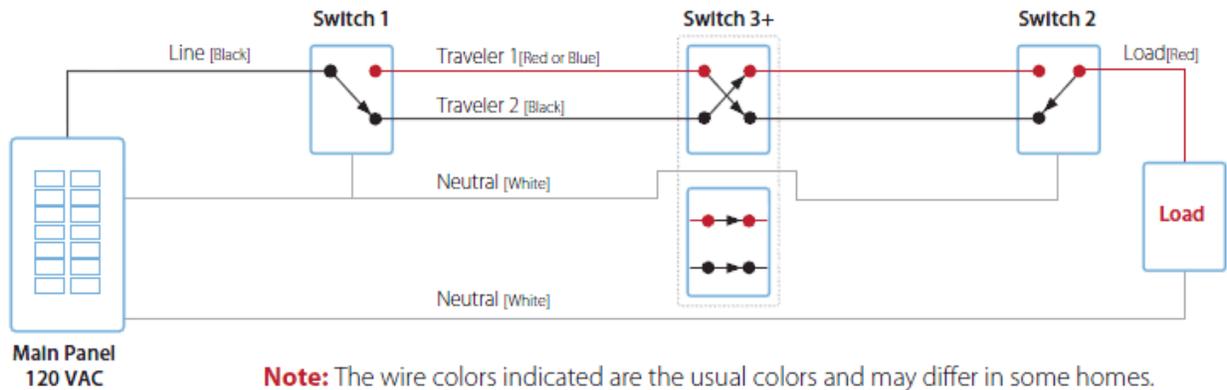
To learn more about multi-way circuits, go to your preferred Internet search engine and enter the search terms "3-way switch" or "4-way switch."

Using SwitchLinc in Virtual Multi-Way Circuits

You can use SwitchLinc modules to replace switches in multi-way circuits that are already wired in or to create multi-way circuits where there is no existing wiring. These are called virtual multi-way circuits. In a virtual multi-way circuit, only one SwitchLinc (called SwitchLinc Primary) is actually connected to and controls the load. Any additional SwitchLinc modules (called SwitchLinc Secondaries) are only connected to the powerline via the line and neutral wires. All SwitchLinc modules can communicate with one another using INSTEON networking on the powerline. After wiring in SwitchLinc modules, you can create a virtual multi-way circuit by setting up all of the modules to control each other. The diagram below shows how you convert a wired-in 3-way circuit using two SwitchLinc modules.

Note: Actual location of SwitchLinc wires may differ with product revision or model.

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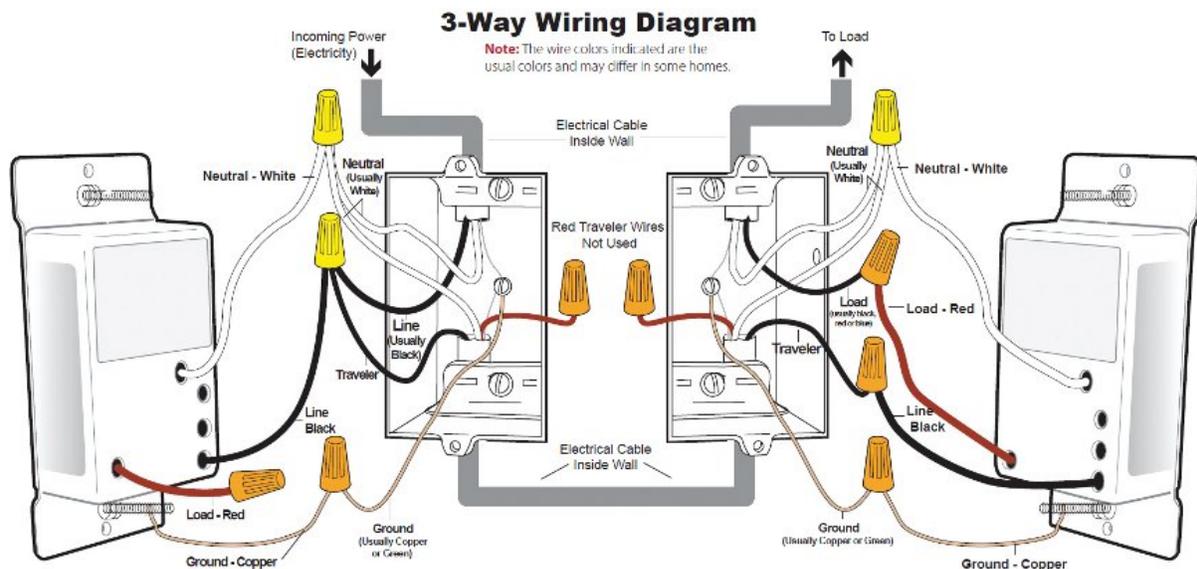
- Notice that the red traveler wires are not used, so they are capped off at both ends with wire nuts
  - The black traveler wire (traveler 2) is converted to a line wire
  - In SwitchLinc Secondary wall box, connect traveler 2 to the existing line wire and to SwitchLinc Secondary line wire
  - In the wall box at the other end of the circuit, connect traveler 2 to SwitchLinc Primary line wire
- The SwitchLinc Primary load wire is connected to the actual lights being controlled
- The load wires on all SwitchLinc Secondaries will not be connected to anything, so cap them off with wire nuts
- All SwitchLinc modules—Primary and Secondaries—must be connected to neutral and ground
  - SwitchLinc will not function without a neutral
  - The switches you are replacing usually will not have a neutral connection
  - If there is no neutral wire in the wall box, consult an electrician or call the INSTEON Support line at 1-800-762-7845

Installing Multi-Way SwitchLinc Modules

When replacing a 3-way mechanical switch, each switch will have three wires connected to it from the wall box. Four- or more-way circuits will have four wires connected to the switches in the center of the circuit. For this tutorial, we will follow the most commonly used wire colors for North American homes:

Line wire (also called hot)	Black
Neutral wire	White wire bundle
Ground wire	Bare copper, green wire or green screw
Load wire	Red
Traveler wires	Black and/or red

1) Disable power at the circuit breaker panel
2) Pull all the switches in the multi-way circuit out of their wall boxes. Each switch should have at least three wires connected to it, depending on whether it is a 3-way, 4-way or more-way circuit.
3) Unscrew the wires from the old switches. If the wires cannot be unscrewed, cut the wires where they enter the switch and strip ½" of bare insulation off the ends.

Fig. 1

4) Turn the electricity back on

   Make sure the wires are not touching anything. They are not grounded and could cause an electrical shock.

Fig. 2

5) Using a voltage meter, individually test and identify each wire (see Fig. 1) The wire measuring 120VAC is the line wire (usually black)
6) Turn the electricity back off
7) Connect the wall box line wire and black traveler wire to SwitchLinc Secondary line wire. Cap all three wires together with a wire nut (see Fig. 2).

Fig. 3

8) Cap wall box red traveler wire with a wire nut
9) Cap SwitchLinc Secondary red load wire with a wire nut
10) Locate the neutral wires (usually a white wire bundle) in the rear of the wall box. Connect SwitchLinc Secondary white neutral wire to the box neutral wires with a wire nut (see Fig. 3)
11) Connect SwitchLinc Secondary bare copper ground wire to the wall box ground wires with a wire nut (see Fig. 4)

Fig. 4

12) If necessary, install additional SwitchLinc Secondaries by repeating steps 7-11. See *Special Treatment for 4- or More-Way Circuits* at the end of this section for more information.

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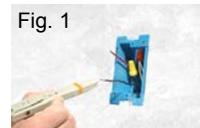
13) In the wall box where you will install SwitchLinc Primary, identify the load wire (usually red). This is the wire that carries power from the switch to the load.
14) Identify the black traveler wire. If you are unsure, repeat steps 3-6 to measure the voltage and find the wire measuring 120VAC. This is the wire connected to the line wire in step 7.
    Make sure the electricity is turned off before proceeding
15) Connect SwitchLinc Primary black line wire to the wall box black traveler wire with a wire nut (see Fig. 2)
16) Cap the wall box's red traveler wire with a wire nut
17) Connect SwitchLinc Primary red load wire to the wall box load wire with a wire nut
18) Connect SwitchLinc Primary white neutral wire to the box neutral wires with a wire nut (see Fig. 3)
19) Connect SwitchLinc Primary bare copper ground wire to the wall box ground wires with a wire nut (see Fig. 4)
20) Refer to step 6 in *Installing SwitchLinc in a Typical 2-Way Circuit* to complete installation

Special Treatment for 4- or More-Way Circuits

If your lighting circuit includes more than two switches controlling a single set of lights, those extra switches will have four wires connected to them. Two of the wires are travelers from the preceding switch, while the other two are travelers to the next switch in the chain. You will convert the black traveler wires to line wires and replace the old 4-wire switches with SwitchLinc Secondaries.

4-Way Wiring Diagram
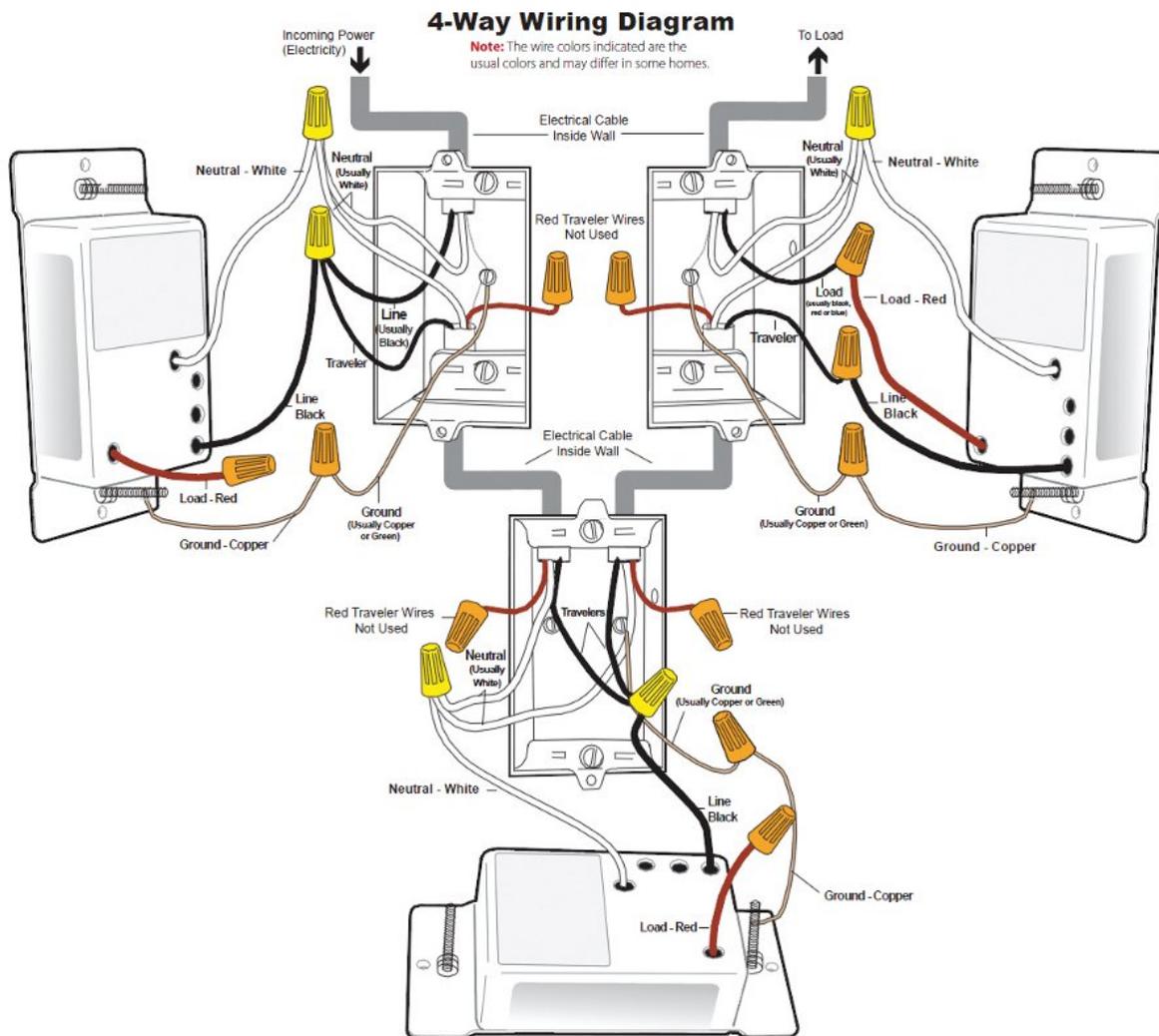
1) Connect SwitchLinc Secondary black line wire to the wall box black traveler wire with a wire nut
2) Cap the two unused traveler wires (usually red) with wire nuts
3) Cap SwitchLinc Secondary red load wire with a wire nut
4) Connect SwitchLinc Primary white neutral wire to the box neutral wires with a wire nut (see Fig. 3)
5) Connect SwitchLinc Primary bare copper ground wire to the wall box ground wires with a wire nut (see Fig. 4)

Using SwitchLinc

Paddle

Like any rocker switch, the paddle top turns on the load while the bottom turns it off. The load's behavior changes depending on whether you tap, double-tap or press and hold the paddle.

Paddle	Tap	Double-Tap	Press and Hold
Top	Ramp to local on-level	Instant full-on	Brighten
Bottom	Ramp to full-off	Instant full-off	Dim

Air Gap

Anytime you need SwitchLinc's controlled circuit to be unpowered but don't want to turn off the circuit breaker—such as when replacing light bulbs—use the air gap to quickly and conveniently disable power to the switch.

Using your fingernail or a small flathead screwdriver, pull out SwitchLinc Set button as far as it will go (about 1/8"). This opens the mechanical contacts and removes all power from SwitchLinc and its load. (Because SwitchLinc's settings are stored in its non-volatile memory, your setup information will not be lost.) To re-enable power to SwitchLinc, simply push in the Set button until it is flush with the trim frame.

Local On-Level

The local on-level is the brightness setting at which the connected load will turn on. While SwitchLinc Dimmer's default on-level is 100% brightness, it is adjustable anywhere from off to 100%.

1) Press and hold SwitchLinc Set button until it beeps
   SwitchLinc status LED will blink green
2) Press and hold SwitchLinc Set button until it beeps again
   SwitchLinc status LED will blink red
3) Press and hold SwitchLinc Set button until it beeps a third time
   SwitchLinc status LED will blink green
4) Press and hold SwitchLinc Set button until it beeps a fourth time
   SwitchLinc status LED will blink red
5) Tap SwitchLinc Set button
   SwitchLinc will beep
   Status LED will double-blink red
6) Use SwitchLinc's paddle to adjust the connected load(s) to the designed brightness level
   Press and hold the paddle top or bottom to gradually brighten/dim the light(s)
   Press and hold the paddle bottom to gradually dim the light(s)
   Release paddle when you reach the desired brightness level
7) Press and hold SwitchLinc Set button until it beeps
8) Test the local on-level by tapping SwitchLinc's paddle on and off
   The load connected to SwitchLinc will ramp to the local on-level

Ramp Rate

The local ramp rate is the time it takes for SwitchLinc to reach 100% brightness (from off) when controlled at the paddle. The default ramp rate is 0.5 seconds, but it is adjustable from instant-on to 9 seconds (using Set button) or up to 8 minutes (with software).

The ramp rate is set up using the light's brightness level as the indicator for the ramping speed: the brighter the light, the faster the ramp rate. Refer to this table to help you set your desired ramp rate:

Brightness Level	Ramp Rate in Seconds
90-100%	0.1
77-86%	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

1) Adjust the connected light(s) to the brightness corresponding with your desired ramp rate (see table above).
2) Quickly double-tap SwitchLinc's Set button.
   SwitchLinc will beep.
3) Test ramp rate settings but tapping SwitchLinc or controller button on and off.
   The connected light(s) will turn on and off at the programmed ramp rate(s).
4) If the ramp rate is not as desired:
   a. Go back to step 1 and repeat the process.
   b. Your Set button double-tap in step 2 might not have been fast enough, and you may have accidentally reprogrammed the local on-level instead.

Note: HouseLinc (and other home automation software) will allow you to set on-levels and ramp rates to your exact specifications—it even extends the maximum ramp rate from 9 seconds to 8 minutes—and apply them consistently to multiple devices throughout your home.

Programming SwitchLinc as Part of an INSTEON Network

SwitchLinc Dimmer can be added to an INSTEON network as both a controller and a responder. Additionally, it can act as an Access Point to detect your home's electrical phases and allow RF-only and powerline-only devices to communicate with each other.

Make SwitchLinc a Controller

Follow the steps below to link SwitchLinc as a controller of another INSTEON device.

1) Press and hold SwitchLinc Set button until it beeps (about 3 seconds)
    Status LED will blink green
    You will have 4 minutes to complete the next steps before linking mode times out
2) Set the responder to the state you want to activate from SwitchLinc (e.g., on, 50% brightness, off)
    If the responder is a multi-scene device such as a KeypadLinc, tap the scene button you want to control so its LED illuminates
3) Press and hold the responder's Set button for 3 seconds
    SwitchLinc will double-beep and status LED will stop blinking
    Responder LED will stop blinking and it may double-beep
4) Confirm that linking was successful by tapping SwitchLinc paddle on and off
    The responder will respond appropriately
5) If you want SwitchLinc to control multiple responders, repeat steps 1-4 with each additional responder or see *Add Multiple Scene Responders*.

Remove SwitchLinc as a Controller

If you are disabling or removing any INSTEON responders that SwitchLinc controls, it is very important that you unlink each responder from SwitchLinc before disabling or removal. Otherwise, SwitchLinc will repeatedly try to send commands, causing delays in your INSTEON network's inter-device communication.

1) Press and hold SwitchLinc Set button until it beeps (about 3 seconds)
    Status LED will blink green
2) Again, press and hold SwitchLinc Set button until it beeps (about 3 seconds)
    Status LED will blink red
    You will have 4 minutes to complete the next step before unlinking mode times out
3) Press and hold the responder Set button for 3 seconds
    SwitchLinc will double-beep and status LED will stop blinking
4) Confirm that unlinking was successful by tapping SwitchLinc paddle on and off
    The responder will no longer respond

Make SwitchLinc a Responder

Follow the steps below to make SwitchLinc a responder of another INSTEON controller.

1) Press and hold the controller Set or scene button until it beeps and/or LED blinks (about 3 seconds)
    If the controller is a multi-scene device such as a KeypadLinc, press and hold the scene button you want to use as the controller
    Controller LED will blink
    You will have 4 minutes to complete the next step before linking mode times out
2) Use SwitchLinc to set the connected load to the state you want to activate from the controller (e.g., on, 50% brightness, off)
3) Press and hold SwitchLinc Set button until it double-beeps (about 3 seconds)
    SwitchLinc status LED will flash once, then turn on solid
4) Confirm that linking was successful by tapping the controller button on and off
    The load connected to SwitchLinc will respond appropriately

Remove SwitchLinc as a Responder

If you are going to disable or remove SwitchLinc, it is very important that you unlink it from all controllers. Otherwise, the controllers will try sending commands to SwitchLinc, causing delays in your INSTEON network's inter-device communication.

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1) Press and hold the controller Set or scene button until it beeps and/or LED blinks (about 3 seconds)
    Controller LED will blink
2) Press and hold the controller Set or scene button until it beeps and/or LED blinks again
    Controller LED will continue blinking
    You will have 4 minutes to complete the next step before unlinking mode times out
3) Press and hold SwitchLinc Set button until it double-beeps
    SwitchLinc status LED will flash once, then turn on solid
4) Confirm that unlinking was successful by tapping the controller button on and off
    The load connected to SwitchLinc will no longer respond

Scenes

INSTEON scenes let you activate dramatic room ambiences with multiple lights and appliances. 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 a controller.

INSTEON scenes are very easy to set up: just link more than one responder to the same On/Off or scene button on a controller. Then, when you press any of the linked buttons on the controller, all of the INSTEON devices linked in the scene will respond as a group.

To set up an INSTEON scene, you can individually link each device to a controller. Or save time and create multiple links at once.

Power Restore

SwitchLinc stores all of its scenes, properties, etc. in its internal non-volatile memory so all settings are retained after a power outage. Upon power being restored, SwitchLinc will return its connected load(s) and all LEDs to their states prior to power outage.

Using SwitchLinc in an X10 Network

Like most INSTEON devices, SwitchLinc X10-ready, meaning it can both send and respond to X10 commands. However, SwitchLinc does not ship with an X10 address, so you must set one up when first installing SwitchLinc or after performing a factory reset.

Add an X10 Address

1) Press and hold SwitchLinc Set button until it beeps (about 3 seconds)
    SwitchLinc status LED will blink
    You will have 4 minutes to complete the next step before linking mode times out
2) Using an X10 controller, send the X10 address you want to assign to SwitchLinc followed by the ON command *three times*
    For example, to assign the address A1, you would send A1-ON-A1-ON-A1-ON
3) Once SwitchLinc Dimmer has received the sequence, it will exit linking mode
    SwitchLinc will double-beep

Remove an X10 Address

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

1) Press and hold SwitchLinc Set button until it beeps (about 3 seconds)

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SwitchLinc status LED will blink

2) Press and hold SwitchLinc Set button until it beeps again
   SwitchLinc status LED will continue blinking
   You will have 4 minutes to complete the next step before unlinking mode times out
3) Using an X10 controller, send the X10 address you want to remove followed by the ON command *three times*
   For example, to remove the address A1, you would send A1-ON-A1-ON-A1-ON
4) Once SwitchLinc has received the sequence, it will exit unlinking mode
   SwitchLinc will beep.

Advanced X10 Programming

Instructions on setting X10 primary address and scene addresses can be found at
http://www.insteon.com/insteon-x10-programming.html.

Advanced Features

Make SwitchLinc a Controller of Multiple Responders

1) Press and hold SwitchLinc Set button until it beeps
   SwitchLinc status LED will start blinking green
2) Tap SwitchLinc Set button
   SwitchLinc status LED will double-blink green
3) For each responder you are adding:
   a. Tap on/off or press and hold to adjust responder to desired state
   b. Press and hold responder Set button until it beeps (or LED flashes)
      SwitchLinc will double-beep
4) After all responders have been added, tap SwitchLinc Set button
   SwitchLinc LED will stop blinking
5) Test by tapping SwitchLinc on and off a couple of times
   All the responders added will respond

Remove SwitchLinc as a Controller of Multiple Responders

1) Press and hold SwitchLinc Set button until it beeps
   SwitchLinc status LED will start blinking green
2) Press and hold SwitchLinc Set button again until it beeps again
   SwitchLinc status LED will start blinking red
3) Tap SwitchLinc Set button
   SwitchLinc status LED will double-blink red
4) For each responder you are removing:
   a. If multi-button device, tap the responding button
   b. Press and hold responder Set button until it beeps (or LED flashes)
5) Tap SwitchLinc Set button
   SwitchLinc status LED will stop blinking
6) Test by tapping controller button a couple of times
   All responders removed will not respond

Groups

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

Example: 2-Switch Circuit

1) Link SwitchLinc as a controller of another INSTEON device. (See *Make SwitchLinc a Controller*.)
2) Link the same INSTEON device as a controller of SwitchLinc. (*See Make SwitchLinc a Responder*.)
3) Test the group by controlling the load from SwitchLinc Dimmer and the other device

The load, SwitchLinc LEDs and the other INSTEON device LEDs will remain in synch

Example: Multi-Way Circuit
Although we recommend using home automation software (such as HouseLinc) to set up multi-way circuit groups, the following steps will also work when carefully followed.

1) Turn on load(s) to desired same level
2) Press and hold SwitchLinc Set button until it beeps
3) Tap SwitchLinc Set button
4) Initiate linking mode on secondary INSTEON device, usually by pressing and holding the Set button for about 3 seconds
5) Repeat step 3 for each addition INSTEON device in the circuit
6) Once all INSTEON devices are in linking mode, tap SwitchLinc Set button
7) Repeat steps 2-6 for each device in the circuit until each has been linked as a controller and responder of all group members
8) Test the group by controlling the load(s) from SwitchLinc and the other devices

Change LED Brightness Levels

SwitchLinc LEDs can be adjusted to shine brighter or dimmer, or even turned off.
1) Press and hold Set button until it beeps

   SwitchLinc status LED will blink green

2) Press and hold Set button until it beeps again

   SwitchLinc status LED will blink red

3) Press and hold Set button until it beeps a third time

   SwitchLinc status LED will blink green

4) Tap Set button

   SwitchLinc will beep and its status LED will double-blink green

5) Press and hold the paddle top/bottom to brighten/dim the LEDs to your desired brightness
6) Once LEDs are adjusted, press and hold Set button until it beeps

Factory Reset

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

1) Pull out SwitchLinc Set button to create an air gap
2) Wait 10 seconds
3) Push in Set button and hold it. Do not let go.

   SwitchLinc will begin to emit a long beep

4) When beep stops, release Set button

   A few seconds will pass
   SwitchLinc will double-beep
   LEDs will return to normal brightness
   The connected load will turn on

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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. During the changeover process, power and load may remain on and operating. There are no dangerous voltages or unsafe areas under the paddle.

- LED kits available: frosted white, four color (includes red, amber, green and blue)
- Paddle kits available: almond, light almond, ivory, gray, black, brown, white

1) If SwitchLinc is already installed in the wall, remove the wallplate from the switch wall box

2) Remove the four Phillips screws that hold the paddle assembly to the metal frame

3) Pull the entire paddle straight away from the switch. You may have to wiggle the bottom of the frame to get it free from the Set button

Figure 1: Paddle assembly and SwitchLinc body separated

4) Using a flat blade or needlenose pliers, snap the large light pipe out of the frame (as shown in Figure 2 at right). Do the same for the small light pipe

Figure 2: Snap out the light pipes with a flat tool.

5) Choose which LEDs and/or paddle and trim frame you would like to install into SwitchLinc

6) Orient the new small light pipe with its protrusion facing toward center of the new frame. Snap it into place. If placed in backwards or reverse, it will not click into place. (Refer to Figure 3 at right.)

7) Orient the new large light pipe with side that has the most protrusions facing toward the center of the new frame. Using only finger pressure, snap the light pipe into the frame. (Refer to Figure 3 at right).
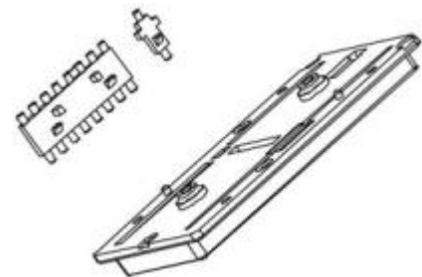

Figure 3: Insert the new light pipes with the protrusions facing the center

8) If both light pipes are installed correctly, they will stick straight out from the back of the frame (as shown in Figure 4, below left). If installed incorrectly, they will appear to be tilted (as shown

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in Figure 5, below right).

Figure 4: LED light pipes correctly installed

Figure 5: LED light pipes incorrectly installed

9) Gently place the paddle assembly onto front of SwitchLinc. A little force may be necessary to snap the assembly over the Set button. Reinstall four screws that you removed in step 2.

Additional Resources

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

Specifications

General	
Product Name	SwitchLinc Dimmer
Brand	INSTEON
Manufacturer Product Number	2476D, INSTEON SwitchLinc Dimmer
UPC	White - 2476D: 891114000082 Almond - 2476DAL: 689076406345 Light Almond - 2476DLAL: 813922011562 Black -2476DBK: 689076406444 Gray - 2476DGY: 689076406741 Ivory - 2476DIV: 689076406642 Brown - 2476DBR: 689076406543
Patent Number	U.S. Patent No. 7,345,998, International patents pending
Warranty	Two years, limited
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INSTEON Address	1 hard-coded out of 16,777,216 possible
Maximum Scene Memberships	417
Brightness Levels	32
On-Level	4 locally, increments of 1% with software
Ramp Rate	0.1 to 2 seconds if programmed locally, 0.125 seconds to 8 minutes if programmed remotely)

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Scene Commands Supported as Controller	On	Fast-on
	Off	Fast-off
	Dim	Brighten
Scene Commands Supported as Responder	On	Fast-on
	Off	Fast-off
	Dim	Brighten
Software Configurable	Yes	
RF Range	915 MHz	
X10 Support	Yes	
X10 Addresses	1 optional (ships unassigned)	
INSTEON Device Category	Dimmer switches	
INSTEON Device Subcategory		
Mechanical		
Mounting	Mounts in single or multiple-ganged wall box. Control 200W less load for each immediately adjacent SwitchLinc 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.	
Wire Nuts	4 included	
Wires	line (black)	
	load (red)	
	neutral (white)	
	ground (bare copper)	
Case Color	White	
Set Button	Yes	
Beeper	Yes	
LED	Dual-color red/green setup LED, 9 white LEDs	
Dimensions	4.1" H x 1.8" W x 1.2" D	
Weight	3.6 oz.	
Operating Environment	Indoors	
Operating Temperature Range	32°F to 104°F	
Operating Humidity Range	Up to 85% relative humidity	
Electrical		
Voltage	120 volts AC +/- 10%, 60 Hertz, single phase	
Maximum Dimmer load	600 watts (uses 12-Amp triac dimmer)	
load Type(s)	Wired-in incandescent lighting devices	
Retains all settings without power	Non-volatile EEPROM	
Standby power consumption	0.59 watts	

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Certifications	Safety tested for use in USA and Canada (ETL #3017581)

Troubleshooting

Problem	Possible Cause	Solution
The LED bar on SwitchLinc is not turning on at all and SwitchLinc won't control my light	SwitchLinc is not getting power	Make sure the circuit breaker is turned on
		Check wall 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	SwitchLinc needs a neutral wire in order to operate	Look in the rear of the wall box for a group of white wires all tied together with a wire nut. Those are the neutral wires. Connect the neutral SwitchLinc wire there.
SwitchLinc is not receiving signals from INSTEON or X10 controllers	SwitchLinc and the controller are on opposite powerline phases	Make sure two Access Points (#2443) or other dual-band INSTEON products are properly installed to detect the two powerline phases
	The controller is plugged into a power strip	Powerline 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
SwitchLinc 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.
		Make sure you are not experiencing interference with older X10 BoosterLinc technology. Upgrade to INSTEON-compatible BoosterLinc modules (#4827).
SwitchLinc doesn't always respond to an INSTEON controller	The INSTEON controller may have been reset without first unlinking SwitchLinc from it	Relink SwitchLinc to the INSTEON controller. See *Adding SwitchLinc Relay as an INSTEON Responder*.
The light turned on by itself	Another controller, a timer or stray X10 signals triggered SwitchLinc	Install a powerline signal blocker in your home to keep X10 signals from neighboring homes from interfering. Consider not using SwitchLinc in X10 mode.
		If the above doesn't work, perform a factory reset. See *Factory Reset*.
SwitchLinc turns on, but not off, using another controller	The load is producing electrical noise that is interfering with the reception of powerline signal	Install a powerline noise filter (such as FilterLinc) between the load and SwitchLinc
		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
		Remove the X10 address from the button on your INSTEON controller so it doesn't send

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		both INSTEON and X10 commands
My light only turns off when I tap the paddle top on SwitchLinc, but I can brighten and dim it	You may have removed an INSTEON device that your SwitchLinc is trying to operate SwitchLinc is retrying the missing INSTEON device	If the INSTEON device is still available, unlink it from SwitchLinc. See *Removing SwitchLinc as an INSTEON Controller*.
		Perform a factory reset. See *Factory Reset*.
When I press the paddle on SwitchLinc, it takes a long time for other INSTEON responders to respond	You may have removed an INSTEON device that your SwitchLinc is trying to operate. SwitchLinc is retrying the missing INSTEON device	If the INSTEON device is still available, unlink it from SwitchLinc. See *Removing SwitchLinc Relay as an INSTEON Responder*.
		Perform a factory reset. See *Factory Reset*.
SwitchLinc doesn't respond to X10 address A1 when I first set it up	Unlike previous X10-only products, SwitchLinc does not have an X10 address set up at the factory	Set up an X10 address. See *Adding an X10 Address*.
The load is buzzing when on or dim	The dimming component inside SwitchLinc "chops" the powerline sine wave to reduce the power	The bulb filaments are vibrating. Use rough-service, 130V or appliance-grade bulbs to reduce the noise.
		Run SwitchLinc in "full-on" mode or switch to a non-dimming SwitchLinc On/Off Relay.
SwitchLinc is locked up	A surge or excessive noise on the powerline may have glitched it	Pull the Set button on SwitchLinc all the way out to create an air gap, wait 10 seconds, then push it back in until it's flush with the trim frame (don't push it all the way in).
		If the above doesn't work, perform a factory reset. See *Factory Reset*.
SwitchLinc is getting warm to the touch	It is normal for wall dimmers to feel warm, but not hot	SwitchLinc Dimmer will dissipate about 1W per 100W controlled. Using metal wall boxes, removing insulation around the box or controlling a smaller load can lessen the heat.
SwitchLinc can turn off my responder, but nothing happens when I send an ON command from SwitchLinc	Your responder may be linked at its off state	Relink your responder to SwitchLinc, while the responding device is on
My controller can turn off SwitchLinc, but SwitchLinc does not turn on when I send an ON command from my controller	SwitchLinc may be linked at its off state	Relink SwitchLinc to your controller, while the load is on
After wiring in SwitchLinc, the unit lets out a continuous beep	SwitchLinc is issuing an error beep because the unit is wired incorrectly	Turn off the circuit breaker and try reinstalling SwitchLinc. If you are still experiencing an error beep, consult an electrician to help you install SwitchLinc.
SwitchLinc 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. SwitchLinc 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
	There might be loose connections within your home's wiring	Install a powerline noise filter (such as a FilterLinc) between the output and the lead.
The status LEDS are too bright	The status LEDS are adjustable and might be set at the brightest level	Dim the LEDs. See *Changing the LED Brightness*.

If you have tried these solutions, reviewed this Owner's Manual, and still cannot resolve an issue you are having with SwitchLinc Dimmer, please call the INSTEON Support line at 1-800-762-7845.

Certification and Warranty

Certification

This product has been thoroughly tested by ITS ETL SEMKO, 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 FCC Rules Part 15 and Industry Canada RSS-210 (Rev. 7 or 8). Operation is subject to the following two conditions:

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

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

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

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

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

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

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

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

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 fluorescente 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 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:

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.

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