

ToggleLinc™ Dimmer
INSTEON® Remote Control Dimmer Switch
Owner's Manual
(#2466Dxxx)



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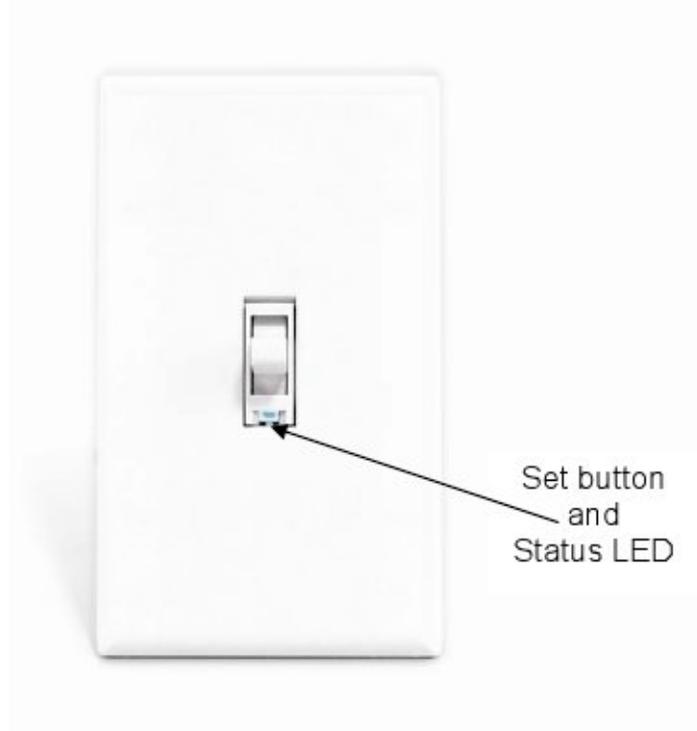
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ToggleLinc Dimmer – Features and Benefits

Congratulations on purchasing the high-quality INSTEON ToggleLinc 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, ToggleLinc itself can be remotely operated from other INSTEON controllers, including other ToggleLinc 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 ramp rates
- Traditional toggle switch: tap up/down (on/off) and press-and-hold (brighten/dim) actions
- Dimmable status LED shows INSTEON setup activity and acts as a gentle nightlight
- Setup state stored in non-volatile memory and preserved through power outages
- Wires in like a standard wall switch (Neutral connection required)
- Supports virtual 3-, 4- or more-way circuits with multiple ToggleLinc modules
- X10 compatible
- Two-year warranty



What's in the Box?

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

Preparing to Install ToggleLinc

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

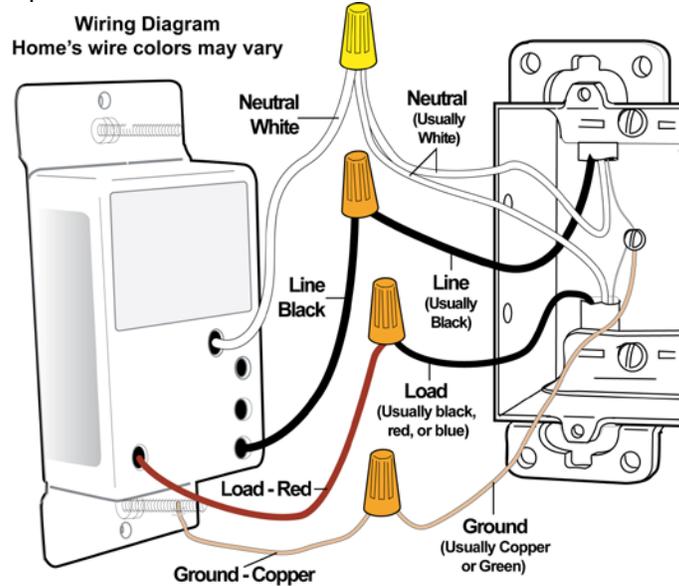
- Flathead screwdriver
- Wire cutter/stripper
- Phillips screwdriver
- Voltage meter

Installing ToggleLinc 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 junction box.
- 3) Disconnect the wires from the switch you are replacing and ensure you have 1/2" of bare wire on the ends.
- 4) To correctly identify the Line, Load, Neutral and Ground wires, enable power to the switch from the circuit breaker or fuse panel, use a line voltage meter and 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.

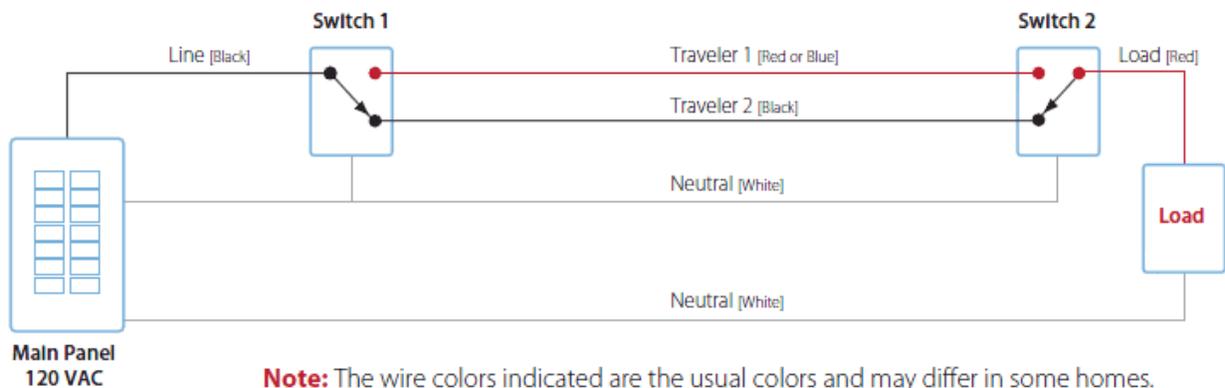
- 5) Ensure that all wire connectors are firmly attached and that there is no exposed copper except for the Ground wire.
- 6) Orient ToggleLinc with the LED bar at the bottom, gently place it into the junction box and screw it into place.
- 7) Enable power to the switch from the circuit breaker or fuse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



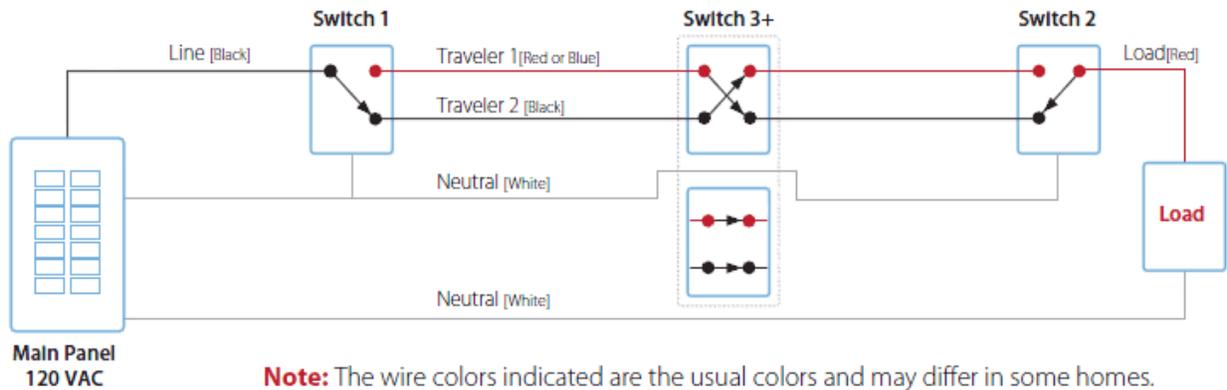
Note: the Neutral wire will not normally be connected to the switch you are replacing. If there is no Neutral wire in the box, consult an electrician or call the INSTEON Support Line at 1-800-762-7845.

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:



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.

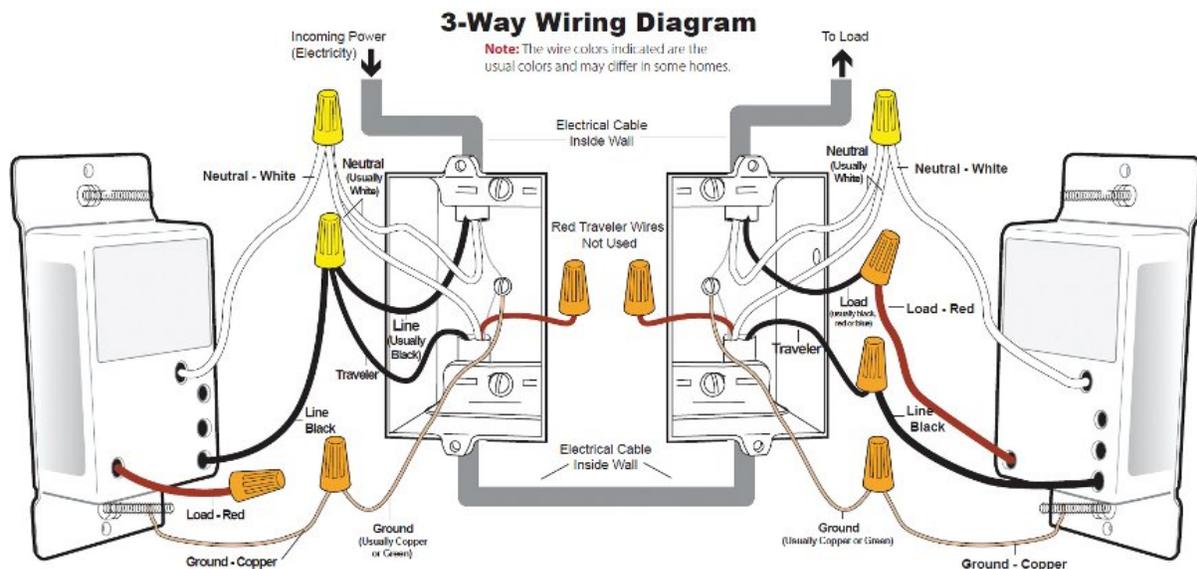


To learn more about multi-way circuits, go to your preferred Internet search engine and enter the search terms “3-way switch” or “4-way switch.”

Using ToggleLinc in Virtual Multi-Way Circuits

You can use ToggleLinc 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 ToggleLinc (called the ToggleLinc Primary) is actually connected to and controls the load. Any additional ToggleLinc modules (called ToggleLinc Secondaries) are only connected to the powerline via the Line and Neutral wires. All the ToggleLinc modules can communicate with one another using INSTEON networking on the powerline. After wiring in the ToggleLinc 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 ToggleLinc modules.

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



- 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 the ToggleLinc Secondary's junction box, connect Traveler 2 to the existing Line wire and to the ToggleLinc Secondary's Line wire.
 - In the junction box at the other end of the circuit, connect Traveler 2 to the ToggleLinc Primary's Line wire.
- The ToggleLinc Primary's Load wire is connected to the actual lights being controlled.
- The Load wires on all ToggleLinc Secondaries will not be connected to anything, so cap them off with wire nuts.
- All ToggleLinc modules—Primary and Secondaries—must be connected to Neutral and Ground.
 - ToggleLinc 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 junction box, consult an electrician or call the INSTEON Support Line at 1-800-762-7845.

Installing Multi-Way ToggleLinc 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 junction 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.
- 4) Turn the electricity back on.

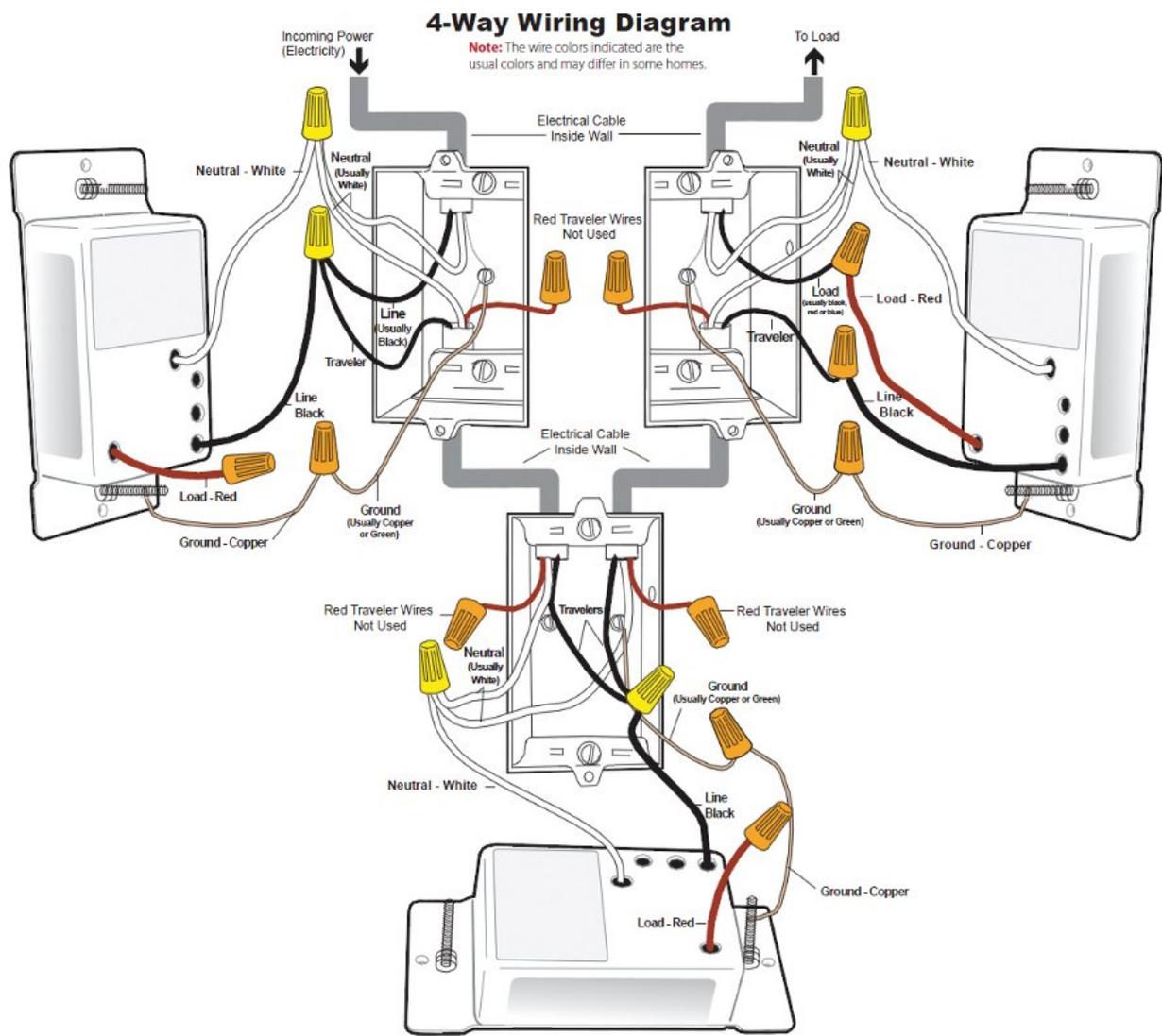
Make sure the wires are not touching anything. They are not grounded and could cause an electrical shock.
- 5) Using a voltage meter, individually test and identify each wire (see Fig. 1). The wire measuring 120VAC is the Line wire (usually black).
- 6) Turn the electricity back off.
- 7) Connect the junction box's Line wire and black Traveler wire to the ToggleLinc Secondary's Line wire. Cap all three wires together with a wire nut (see Fig. 2).
- 8) Cap the junction box's red Traveler wire with a wire nut.
- 9) Cap the ToggleLinc Secondary's red Load wire with a wire nut.
- 10) Locate the Neutral wires (usually a white wire bundle) in the rear of the junction box. Connect ToggleLinc Secondary's white Neutral wire to the box's Neutral wires with a wire nut (see Fig. 3).
- 11) Connect ToggleLinc Secondary's bare copper Ground wire to the junction box's Ground wires with a wire nut (see Fig. 4).
- 12) If necessary, install additional ToggleLinc Secondaries by repeating steps 7-11. See *Special Treatment for 4- or More-Way Circuits* at the end of this section for more information.



- 13) In the junction box where you will install ToggleLinc 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 ToggleLinc Primary's black Line wire to the junction box's black Traveler wire with a wire nut (see Fig. 2).
- 16) Cap the junction box's red Traveler wire with a wire nut.
- 17) Connect ToggleLinc Primary's red Load wire to the junction box's Load wire with a wire nut.
- 18) Connect ToggleLinc Primary's white Neutral wire to the box's Neutral wires with a wire nut (see Fig. 3).
- 19) Connect ToggleLinc Primary's bare copper Ground wire to the junction box's Ground wires with a wire nut (see Fig. 4).
- 20) Refer to step 6 in *Installing ToggleLinc 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 ToggleLinc Secondaries.



- 1) Connect ToggleLinc Secondary's black Line wire to the junction box's black Traveler wire with a wire nut.
- 2) Cap the two unused Traveler wires (usually red) with wire nuts.
- 3) Cap ToggleLinc Secondary's red Load wire with a wire nut.
- 4) Connect ToggleLinc Primary's white Neutral wire to the box's Neutral wires with a wire nut (see Fig. 3).
- 5) Connect ToggleLinc Primary's bare copper Ground wire to the junction box's Ground wires with a wire nut (see Fig. 4).

INSTEON Networks: Split Single-Phase vs. 3-Phase Installation

For the best INSTEON network performance, make sure you have installed at least two Access Points (#2443) or other [dual-band INSTEON products](#). INSTEON has only been officially tested in a split single-phase residential environment, but has been known to work in many 3-phase systems with three dual-band products used (one on each phase). However, due to the potential complexity of its troubleshooting, the INSTEON Support Line is unable to help with INSTEON installations in 3-phase environments.

Using ToggleLinc Dimmer

Using the Toggle

Like any traditional toggle switch, tapping the switch up turns on the load while down turns it off. The load's behavior changes depending on whether you tap, double-tap or press and hold the toggle.

Toggle	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

Using the Air Gap

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

Setting the Local On-Level

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

- 1) Use ToggleLinc's switch to adjust the load to the desired brightness level.
- 2) Once the brightness level has been reached, tap ToggleLinc's Set button once.
ToggleLinc will beep.
- 3) Test the local on-level by tapping ToggleLinc's toggle on and off.
The load connected to ToggleLinc will ramp to the local on-level.

Setting the Ramp Rate

The ramp rate is the speed at which the connected load goes from full-off to the local on-level and vice versa. The default ramp rate is 0.5 seconds, but is adjustable from 0.1 seconds to 2 seconds (manual programming from the Set button) all the way to 8 minutes (programming through home automation software such as HouseLinc).

When setting the ramp rate, the speed is determined using the load's brightness level. Refer to the table below while programming to set the desired ramp rate:

- 1) Use ToggleLinc's switch to adjust the load to the brightness level corresponding with the desired ramp rate:

Brightness Level	Ramp Rate (seconds)
90-100%	0.1
77-87%	0.2
65-74%	0.3

52-61%	2
39-48%	2
26-35%	4.5
13-23%	6.5
1-10%	8.5
0%	9

- 2) Once the brightness level has been reached, double-tap ToggleLinc's Set button.
ToggleLinc will beep.
- 4) Test the local ramp rate by tapping ToggleLinc's toggle up and down.
- 3) *The load connected to ToggleLinc will ramp on and off at the set rate.*
- 4) Note: when using HouseLinc or other home-management software, you can set local on-levels and ramp rates consistently for multiple devices throughout your home.

Programming ToggleLinc Dimmer as Part of an INSTEON Network

ToggleLinc 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.

Adding ToggleLinc Dimmer as an INSTEON Controller

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

- 1) Press and hold ToggleLinc's Set button until it beeps (about 3 seconds).
Status LED will blink.
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 ToggleLinc (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.
ToggleLinc will double-beep and its LED will stop blinking
Responder's LED will stop blinking and it may double-beep.
- 4) Confirm that linking was successful by tapping ToggleLinc's toggle on and off.
The responder will respond appropriately.
- 5) If you want ToggleLinc Dimmer to control multiple responders, repeat steps 1-4 with each additional responder or see *Add Multiple Scene Responders*.

Removing ToggleLinc Dimmer as an INSTEON Controller

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

- 1) Press and hold ToggleLinc's Set button until it beeps (about 3 seconds).
Status LED will blink.
- 2) Again, press and hold ToggleLinc's Set button until it beeps (about 3 seconds).

Status LED will continue blinking.

You will have 4 minutes to complete the next step before unlinking mode times out.

- 3) Press and hold the responder's Set button for 3 seconds.
ToggleLinc will double-beep and its LED will stop blinking
- 4) Confirm that unlinking was successful by tapping ToggleLinc's toggle on and off.
The responder will no longer respond.

Adding ToggleLinc Dimmer as an INSTEON Responder

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

- 1) Press and hold the controller's 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's LED will blink.
You will have 4 minutes to complete the next step before linking mode times out.
- 2) Use ToggleLinc 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 ToggleLinc's Set button until it double-beeps (about 3 seconds).
ToggleLinc's status LED will flash.
- 4) Confirm that linking was successful by tapping the controller button on and off.
The load connected to ToggleLinc will respond appropriately.

Removing ToggleLinc Dimmer as an INSTEON Responder

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

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

Creating INSTEON Scenes

INSTEON scenes let you activate dramatic room ambiances 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

ToggleLinc Dimmer 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, ToggleLinc will return its connected load(s) and all LEDs to their states prior to power outage.

Programming ToggleLinc Dimmer as Part of an X10 Network

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

Adding an X10 Address

- 1) Press and hold ToggleLinc's Set button until it beeps (about 3 seconds).
ToggleLinc's 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 ToggleLinc Dimmer 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 ToggleLinc Dimmer has received the sequence, it will exit linking mode.
ToggleLinc will double-beep.

Removing an X10 Address

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

- 1) Press and hold ToggleLinc's Set button until it beeps (about 3 seconds).
ToggleLinc's status LED will blink.
- 2) Press and hold ToggleLinc's Set button until it beeps again.
ToggleLinc's 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 ToggleLinc Dimmer has received the sequence, it will exit unlinking mode.
ToggleLinc will beep.

Advanced 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

- 1) Press and hold ToggleLinc's Set button until it beeps.
ToggleLinc status LED will start blinking.

- 2) Tap ToggleLinc's Set button.
*ToggleLinc status LED will double-blink.
You will have 4 minutes to complete the next step before multi-linking mode times out.*
- 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).
ToggleLinc will double-beep.
- 4) After all responders have been added, tap ToggleLinc Set button.
ToggleLinc LED will stop blinking.
- 5) Test by tapping ToggleLinc on and off a couple of times.
All the responders added will respond.

Remove Multiple Scene Responders

- 1) Press and hold ToggleLinc's Set button until it beeps.
ToggleLinc status LED will start blinking.
- 2) Press and hold ToggleLinc's Set button until it beeps again.
ToggleLinc status LED will continue blinking.
- 3) Tap ToggleLinc's Set button.
*ToggleLinc status LED will double-blink.
You will have minutes to complete the next step before multi-unlinking mode times out.*
- 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 ToggleLinc's Set button.
ToggleLinc status LED will stop blinking.
- 6) Test by tapping controller button a couple of times
All responders removed will not respond.

Synchronizing 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 ToggleLinc Dimmer as a controller of another INSTEON device. (See *Adding ToggleLinc Dimmer as an INSTEON Controller.*)
- 2) Link the same INSTEON device as a controller of ToggleLinc Dimmer. (See *Adding ToggleLinc Dimmer as an INSTEON Responder.*)
- 3) Test the group by controlling the load from ToggleLinc Dimmer and the other device.
The load, ToggleLinc Dimmer's LEDs and the other INSTEON device's 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 ToggleLinc Dimmer's Set button until it beeps.
- 3) Tap ToggleLinc Dimmer's 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 ToggleLinc Dimmer's 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 ToggleLinc Dimmer and the other devices.

Changing LED Brightness Levels

ToggleLinc Dimmer's status LED can be adjusted to shine brighter or dimmer, or even turned off.

- 1) Press and hold Set button until it beeps.
ToggleLinc's status LED will blink.
- 2) Press and hold Set button until it beeps again.
ToggleLinc's status LED will continue blinking.
- 3) Press and hold Set button until it beeps a third time.
ToggleLinc's status LED will stop blinking.
- 4) Press and hold the toggle up or down to brighten/dim the status LED to the desired level.
- 5) Once you have reached the desired brightness level, tap Set button.
ToggleLinc will beep.

Factory Reset

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

- 1) Pull out ToggleLinc's Set button to create an air gap.
- 2) Wait 10 seconds.
- 3) Push in Set button and hold it. Do not let go.
ToggleLinc will begin to emit a long beep.
- 4) When beep stops, release Set button.
A few seconds will pass.
ToggleLinc will double-beep.
LEDs will return to normal brightness.
The connected load will turn on.

Additional Resources

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	ToggleLinc Dimmer
Brand	INSTEON
Manufacturer Product Number	2466D, INSTEON ToggleLinc Dimmer (White)
UPC	689076400541
Patent Number	Protected under U.S. and foreign patents (see www.insteon.com)

Warranty	Two years, limited	
Operation		
On-Levels	32 locally; increments of 1% with software	
Ramp Rate	0.1 to 9 seconds if programmed locally; 0.125 seconds to 8 minutes if programmed with software	
LED	1 dimmable white status LED	
Operation Modes	INSTEON only, X10 only, INSTEON and X10 combo	
Combo Mode Message Order	INSTEON, INSTEON cleanup, X10	
Multi-Way Circuit Support	One ToggleLinc Dimmer controls load, Cross-Link any number of ToggleLinc Dimmers or other INSTEON Controllers	
Setup Memory	Non-volatile EEPROM	
INSTEON		
INSTEON Address	1 hard-coded out of 16,777,216 possible	
Maximum Scene Memberships	417	
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
INSTEON Powerline Frequency	131.65KHz	
INSTEON Minimum Receive Level	10mV	
INSTEON Messages Repeated	Yes	
Mechanical		
Paddle Type	Toggle	
Wire Nuts	3 included	
Mounting	Mounts in single or multiple-ganged junction box. Control 200W less load for each immediately adjacent ToggleLinc 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.	
Wires	Line (black)	
	Load (red)	
	Neutral (white)	
	Ground (bare copper)	
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
Power Wire Leads	6", 16 AWG, stranded, 600V, 105Å°C insulation, ends stripped and tinned, Line (black), Load (red), Neutral (white)
Ground Lead	6", 18 AWG, stranded, bare copper
Load Type(s)	Wired-in incandescent lighting devices
Maximum Load	600W
Standby power consumption	1.38 watts
Certifications	Safety tested for use in USA and Canada (ETL #3017581)
X10 Features	
X10 Primary Address	1 optional (comes unassigned)
X10 Status Response	Supported
X10 Resume Dim	Supported by setting local on-level to zero
X10 Powerline Frequency	120KHz
X10 Minimum Transmit Level	3.2 Vpp into 5 Ohms
X10 Minimum Receive Level	20mV into 5 Ohms
X10 Messages Repeated	No

Troubleshooting

Problem	Possible Cause	Solution
The LED on ToggleLinc is not turning on at all and ToggleLinc won't control my light.	ToggleLinc is not getting power.	Make sure the circuit breaker is turned on.
		Make sure the Set button is not pulled out (air gap).
		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.	ToggleLinc 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 Neutral ToggleLinc wire there.
ToggleLinc is not receiving signals from INSTEON or X10 controllers.	ToggleLinc and the controller are on opposite powerline phases.	Make sure two Access Points (#2443) or other dual-band INSTEON products are properly installed to bridge the two powerline phases.
ToggleLinc is not linking to or working with an INSTEON controller or	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.

device.		Make sure you are not experiencing interference with older X10 BoosterLinc technology. Upgrade to INSTEON-compatible BoosterLinc modules (#4827) .
ToggleLinc doesn't always respond to an INSTEON controller.	The INSTEON controller may have been reset without first unlinking ToggleLinc from it.	Relink ToggleLinc to the INSTEON controller. See Adding ToggleLinc as an INSTEON Responder .
The light turned on by itself.	Another controller, a timer or stray X10 signals triggered ToggleLinc.	Install a powerline signal blocker in your home to keep X10 signals from neighboring homes from interfering. Consider not using ToggleLinc in X10 mode. If the above doesn't work, perform a factory reset. See Factory Reset .
The controlled light does not turn on or off right away.	The ramp rate may be set too slow.	Set a shorter ramp rate. See Setting the Ramp Rate .
ToggleLinc 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 ToggleLinc. 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 both INSTEON and X10 commands.
My light only turns off when I tap the toggle top on ToggleLinc Dimmer, but I can brighten and dim it.	You may have removed an INSTEON device that your ToggleLinc is trying to operate. ToggleLinc is retrying the missing INSTEON device.	If the INSTEON device is still available, unlink it from ToggleLinc. See Removing ToggleLinc as an INSTEON Controller . Perform a factory reset. See Factory Reset .
When I press the toggle on ToggleLinc, it takes a long time for other INSTEON responders to respond.	You may have removed an INSTEON device that your ToggleLinc is trying to operate. ToggleLinc is retrying the missing INSTEON device.	If the INSTEON device is still available, unlink it from ToggleLinc. See Removing ToggleLinc Relay as an INSTEON Responder . Perform a factory reset. See Factory Reset .
ToggleLinc doesn't respond to X10 address A1 when I first set it up.	Unlike previous X10-only products, ToggleLinc 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 ToggleLinc "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 ToggleLinc in "full-on" mode or switch to a non-dimming ToggleLinc On/Off Relay.
ToggleLinc is locked up.	A surge or excessive noise on the powerline may have glitched it.	Pull the Set button on ToggleLinc 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 .
ToggleLinc is getting warm to the touch.	It is normal for wall dimmers to feel warm, but not hot.	ToggleLinc Dimmer will dissipate about 1W per 100W controlled. Using metal junction boxes, removing insulation around the box or controlling a smaller load can lessen the heat.
ToggleLinc can turn off my responder, but nothing happens when I send an ON command from ToggleLinc.	Your responder may be linked at its off state.	Relink your responder to ToggleLinc, while the responding device is on.
My controller can turn off ToggleLinc, but ToggleLinc does not turn on when I send an ON command from my controller.	ToggleLinc may be linked at its off state.	Relink ToggleLinc to your controller, while the load is on.
After wiring in ToggleLinc, the unit lets out a continuous beep.	ToggleLinc is issuing an error beep because the unit is wired incorrectly.	Turn off the circuit breaker and try reinstalling ToggleLinc. If you are still experiencing an error beep, consult an electrician to help you install ToggleLinc.

If you have tried these solutions, reviewed this Owner's Manual, and still cannot resolve an issue you are having with ToggleLinc 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 radioelectrique 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.

Protected under U.S. and foreign patents (see www.insteon.com).

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