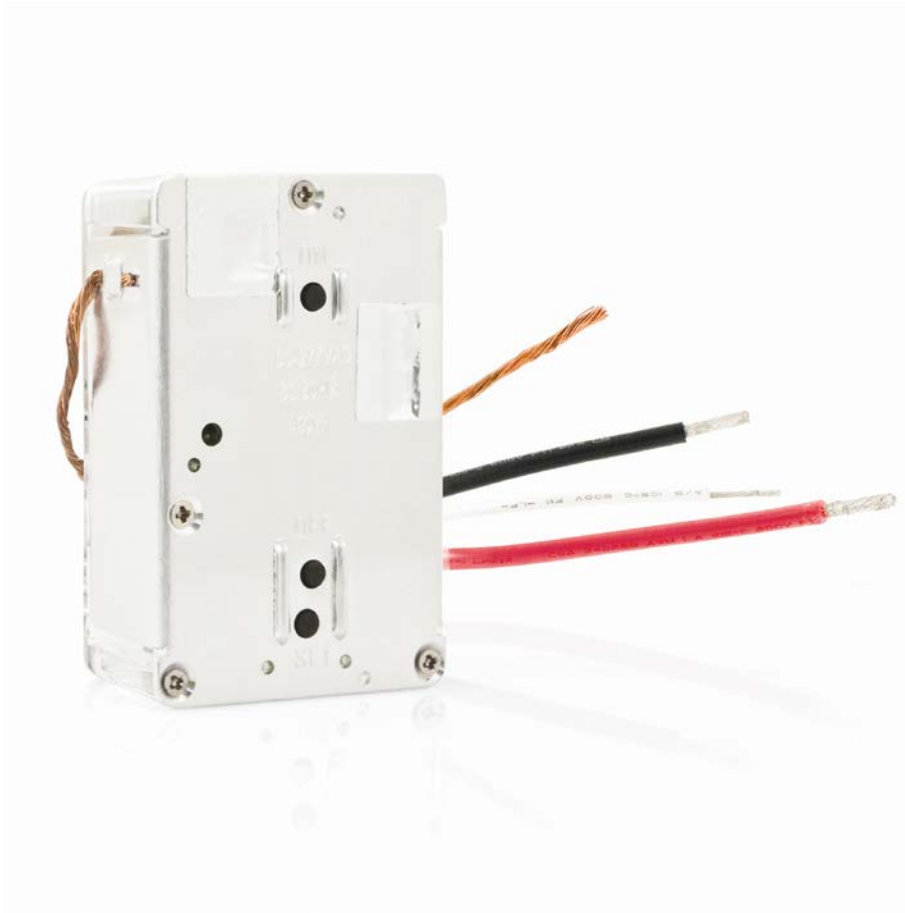


In-LineLinc™ Dimmer  
INSTEON® In-LineLinc Dimmer, Dual-Band  
Owner's Manual (#2475DA1)



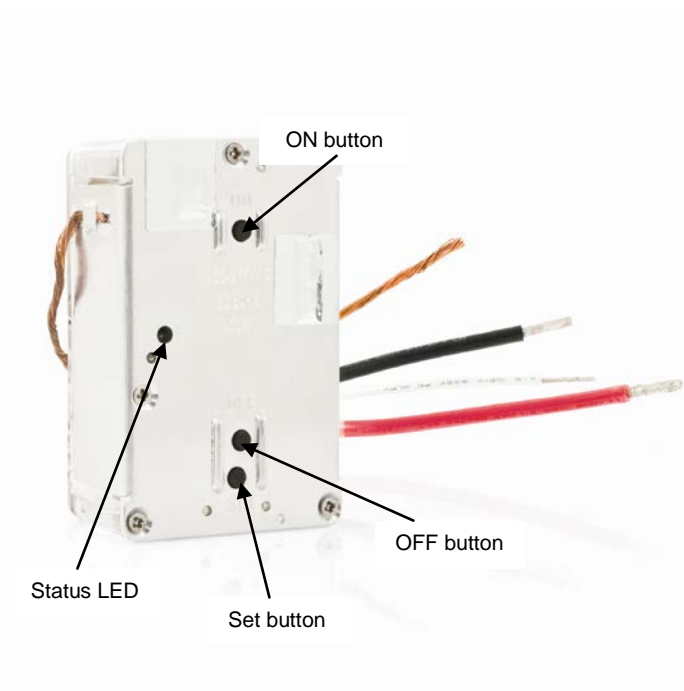
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## In-LineLinc Dimmer Dual-Band

Congratulations on your purchase of the elegant, high-quality In-LineLinc Dimmer Dual-Band. In-LineLinc Dimmer installs in-line to provide INSTEON control of individual dimmable lighting fixtures. Additionally, In-LineLinc Dimmer eliminates the need for a conventional light switch, reducing the “switch sprawl” common to automation projects. You can also use In-LineLinc Dimmer for INSTEON signal repeating and phase bridging (like an Access Point, #2443). In-LineLinc Dimmer supports voltages from 100-277V, 50/60Hz and loads up to 400W, making it the perfect energy-saving, wireless controller.

## Features and Benefits

- Once installed, INSTEON setup is easy
- Controls incandescent loads up to 400W
- Supports up to 400 scene memberships
- Shows INSTEON setup mode activity with beeper and dual-color Status LED
- Communicates simultaneously over both radio frequency (RF) and the powerline
- Acts as an Access Point for RF-only INSTEON devices
- Stores setup state in non-volatile memory so settings aren't lost during power outages
- Wires into standard junction boxes (requires a NEUTRAL connection)
- Two-year warranty



## What's in the Box?

- In-LineLinc Dimmer Dual-Band
- Quick Start Guide
- Four (4) wire nuts

# Installation

## CAUTIONS AND WARNINGS

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

In-LineLinc Dimmer Dual-Band 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. In-LineLinc Dimmer Dual-Band is not designed nor approved for use on power lines other than single-phase voltages between 100v and 277v with 50 Or 60Hz service. Attempting to use In-LineLinc Dimmer Dual-Band 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 in which you are installing In-LineLinc Dimmer. Installing In-LineLinc Dimmer with the power on will expose you to dangerous voltages.
- The wires connecting In-LineLinc to the incoming power must be protected by a fuse or circuit breaker of 15 amps or less
- Connect only copper or copper-clad wire to In-LineLinc Dimmer
- In-LineLinc Dimmer may feel warm during operation. The amount of heat generated is within approved limits and poses no hazards. To minimize heat buildup, ensure that the area surrounding the rear of In-LineLinc Dimmer is as clear of clutter as possible.
- Each In-LineLinc Dimmer is assigned a unique INSTEON I.D., which is printed on the device's label.
- To reduce the risk of overheating and possible damage to other equipment, use In-LineLinc Dimmer to control no more than 400 Watts of incandescent at 100VAC to 277VAC.
- 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.
- You will need a flathead screwdriver, a Phillips screwdriver and a voltage meter to install In-LineLinc Dimmer

### 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 from a separate cable jacket
- Ground – Bare copper wire or metal fixture (if grounded)

**IMPORTANT!** If you are not knowledgeable about and/or and comfortable with, electrical circuitry, you should have a qualified electrician install In-LineLinc Dimmer for you. If you have any questions, please consult an electrician or call the INSTEON Support Line at 800-762-7845.

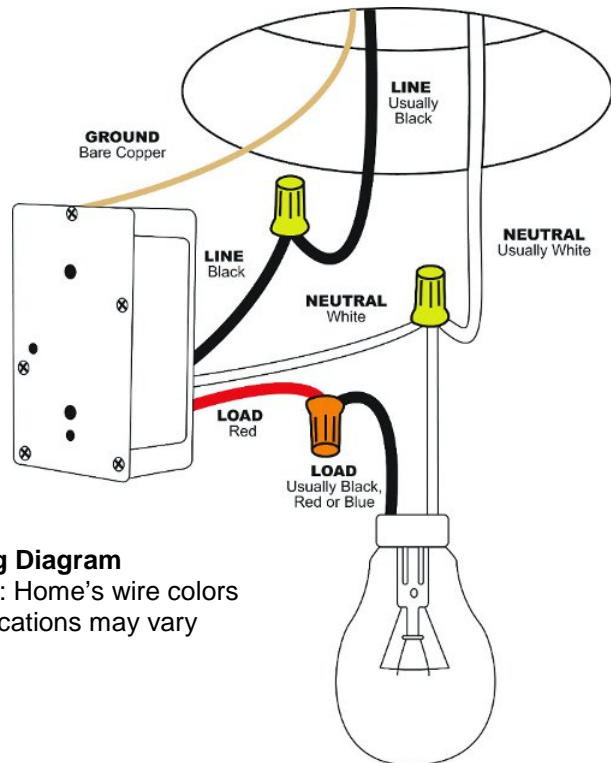
## Tools Needed

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

## Installing In-LineLinc Dimmer

- 1) At electrical panel, turn off circuit breaker(s) and/or remove fuse(s) feeding wall box. Verify the power is off.
- 2) Remove the fixture's wallplate, unscrew the fixture and pull it out from the junction box.
- 3) Disconnect the wires from the fixture and ensure that you have ½" of bare wire on the ends.<sup>1</sup>
- 4) After ensuring wires are not touching, turn breaker(s) back on.
- 5) Use a voltage meter to identify the Line and Load wires connected to the fixture, then identify Neutral and Ground wires.
- 6) Turn off breaker(s).
- 7) Connect wires according to the wiring diagram below. Confirm there are firm attachments with no exposed wire.
- 8) Prior to reinstalling the fixture, turn on circuit breaker supplying power to the fixture.
- 9) Use In-LineLinc Dimmer's ON and OFF buttons to test load control.
- 10) Add In-LineLinc Dimmer to scene(s) as a responder to desired INSTEON devices.
- 11) Turn off breaker(s).
- 12) Gently place In-LineLinc Dimmer into the junction box, making sure nothing could accidentally press any of the buttons on its face.
- 13) Reinstall the fixture.
- 14) Turn on breaker(s).

In-LineLinc Wire	Wall Box Wires
Bare copper	Ground (commonly bare green wire or green screw)
White	Neutral (commonly white wire bundle)
Red	Load (Light, etc.)
Black	Line (100 - 277V to Neutral)



### Wiring Diagram

NOTE: Home's wire colors and locations may vary

## Using In-LineLinc Dimmer

### LEDs

LED	Meaning
Solid green	Load is on (at any dim level)
Solid red	Load is off
Blinking green	Unit is in linking mode
Blinking red	Unit is in unlinking mode
Fast blinking red and optional blink-on-traffic is turned on	Dimmer is off and INSTEON traffic received
Fast blinking green and optional blink-on-traffic is turned on	Dimmer is on and INSTEON traffic received

### Using the ON and OFF Buttons

The small button switches allows you to test the load and functions prior to final installation.

Button	Tap	Double-Tap	Press and Hold
ON	Ramp to on-level	Fast on	Brighten
OFF	Ramp to off	Fast off	Dim
Set	Set the default on-level	Sets the default ramp rate	Starts linking mode

### Local On-Level

The local on-level is the brightness level at which the light(s) physically wired to In-LineLinc Dimmer turn on. The default on-level is 100%, but it can be adjusted to any brightness level.

- 1) Use either In-LineLinc Dimmer's ON or OFF buttons to adjust light to desired brightness.
- 2) Tap the In-LineLinc Dimmer's Set button.  
*In-LineLinc will beep.*
- 3) Test on-level settings by tapping In-LineLinc Dimmer's ON/OFF buttons.

#### NOTE:

If In-LineLinc Dimmer's Status LED is blinking, you held the Set button down too long and accidentally placed it into linking mode, which times out after 4 minutes of inactivity. To manually exit linking mode, tap any button except Set button.

## Beeper Behavior

In-LineLinc Dimmer 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 link or unlink
- Continuous beeps for 3 seconds: unsuccessful link or 4-minute setup timeout
- Continuous beeps for 10 seconds: warning prior to a factory reset

## Setting Up an INSTEON Scene

INSTEON remote control is done using scenes. Scenes allow you to instantly activate favorite lighting and appliance settings at the touch of a button (or in response to a command from a central controller or sensor). Each scene has at least one controller and at least one responder linked to one another. Simple scenes can be set up using the instructions below. Software such as HouseLinc is recommended for setup of larger scenes.

### Adding In-LineLinc Dimmer to a Scene as an INSTEON Responder

- 1) Use In-LineLinc Dimmer's ON/OFF buttons to adjust the load to the state you wish to activate from the controller.
- 2) Press and hold the scene controller button until it beeps.<sup>1</sup>  
*Controller's LED will blink.*
- 3) Press and hold In-LineLinc Dimmer's Set button until it double-beeps.  
*Controller will double-beep<sup>2</sup> and its LED will stop blinking.*
- 4) Confirm that scene addition was successful by toggling the controller's scene button on and off.  
*Light should turn on at the level you defined in step 1, then off.*

### Removing In-LineLinc Dimmer from a Scene as an INSTEON Responder

If you are going to uninstall In-LineLinc Dimmer, it is very important that you remove it from all of its scene controllers. Otherwise, controllers will experience delays and may produce flashing error indications.

- 1) Press and hold controller's scene button until controller beeps.<sup>3</sup>  
*Controller's LED will blink.*
- 2) Press and hold Controller's scene button until controller beeps again.<sup>3</sup>  
*Controller's LED will continue blinking.*
- 3) Press and hold In-LineLinc Dimmer's Set button until it double-beeps.  
*Controller will double-beep<sup>2</sup> and its LED will stop blinking.*
- 4) Confirm scene removal was successful by tapping the button on the controller with the scene you just removed.  
*In-LineLinc Dimmer will no longer respond.*

## Advanced Features

### Using In-LineLinc Dimmer as a Phase Bridge

In-LineLinc Dimmer automatically bridges the electrical phases in your home to allow powerline-only INSTEON devices to communicate with RF-only INSTEON devices. If you are relying on In-LineLinc

<sup>1</sup> If the controller does not have a beeper, wait until its LED begins blinking

<sup>2</sup> Most models

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

Dimmer to bridge the building's electrical phases, use the following procedure to activate phase bridging detection mode:

- 1) Start phase bridging detection mode by tapping In-LineLinc Dimmer's Set button four times quickly.  
*In-LineLinc Dimmer will begin beeping and setup LED will be solid green.*
- 2) Check the LED behavior of the "other" dual-band devices.
  - a) If it is blinking green, it is within range and not on the same electrical phase. Go to step 3.
  - b) If it is not blinking green, try moving the device, check other devices or begin the test from a different device.
- 3) Tap In-LineLinc Dimmer's Set Button.  
*In-LineLinc Dimmer stops beeping and LED returns to previous state.  
Other devices' LEDs will stop blinking in a few seconds.*

## Power Restoration

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

## X10 Programming

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

## Factory Reset

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

### Option 1

- 1) If possible, remove all scene memberships prior to performing the factory reset.
- 2) Press and hold In-LineLinc Dimmer's Set button until it beeps.  
*LED will blink green.*
- 3) Press and hold In-LineLinc Dimmer's Set button until it beeps again.  
*In-LineLinc Dimmer's LED will blink red.*
- 4) Double-tap In-LineLinc Dimmer's Set button, then press and hold until the long beep stops.  
*In-LineLinc Dimmer will emit a long beep and its LED will turn off.  
The connected load will turn on.*

### Option 2 – partner required

- 1) If possible, remove all scene memberships prior to performing the factory reset.
- 2) Turn off circuit breaker.
- 3) While pressing and holding In-LineLinc Dimmer's Set button (do not let go), have a partner turn on the circuit breaker.  
*As you continue to press and hold, In-LineLinc Dimmer will emit a long beep.*
- 4) Continue to press and hold Set button until long beep stops, then release.  
*In-LineLinc Dimmer will double-beep and its LED will turn green.  
The connected load will turn on.*



## Local Ramp Rate

The local ramp rate is the time it takes for the light(s) physically wired to In-LineLinc Dimmer to brighten from off to 100% brightness and vice versa. The default ramp rate is 0.5 seconds, but it is adjustable from 0.1 seconds to 9 seconds locally or up to 8 minutes using software such as [HouseLinc](#). Ramp rate is determined using the brightness level of the load. Refer to the chart below to determine the ramping speed based on the load brightness.

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

- 1) Adjust the connected light(s) to the brightness level corresponding to desired ramp rate.
- 2) Double-tap In-LineLinc Dimmer's Set button.  
*In-LineLinc Dimmer will double-beep.*
- 3) Test the ramp rate settings by tapping In-LineLinc Dimmer's ON/OFF buttons.  
*The connected light(s) will brighten and dim at the new rate.*
- 4) If your double-tap was not fast enough, you may have accidentally changed the local on-level instead of the local ramp rate. (Note: software such as HouseLinc allows you to remotely set on-levels and ramp rates exactly as desired and consistently around the house.)

## Specifications

General		
Product name	In-LineLinc Dimmer Dual-Band – INSTEON Remote Control In-Line Dimmer (Dual-Band)	
Brand	INSTEON	
Manufacturer product number	2475DA1	
UPC	813922012361	
FCC ID	SBP2475DA1	
Patent number	7,345,998; protected under U.S. and foreign patents (see <a href="http://www.insteon.com">www.insteon.com</a> )	
Warranty	2 years, limited	
INSTEON		
INSTEON I.D.	1	
INSTEON	400 responder groups and 1 controller group	
Maximum scene memberships	400 (combined controller and responder)	
Scene commands supported as responder	On	Off
	Fast on	Fast off
	Brighten	Dim
Software configurable	Yes, always	
RF range	100-Feet open air	
X10 support	Yes	
X10 addresses	1 max, unassigned by default	

INSTEON device category	0x01
INSTEON device subcategory	0x32
<b>Mechanical</b>	
Mounting	Mounts inside standard electrical box in the ceiling or in the wall
Wires	Colors: White – Neutral 18-gauge Black – Hot 16-gauge Red – Load 16-gauge Copper – Earth ground 14-gauge
Set button	1
Beeper	Yes
LED	Dual-color green and red
Dimensions	2.75" H x 1.75" W x 0.88" D
Weight	120 grams / 0.26 pounds
Operating environment	Indoors
Operating temperature range	32 - 104 degrees Fahrenheit (0 – 40 degrees Celsius)
Operating humidity range	0-90% relative humidity, non-condensing
Storage conditions	4F to +158F (-20 – 70 degrees Celsius)
<b>Electrical</b>	
Voltage	100 to 277VAC (+/- 10%)
Frequency	50/60Hz Auto Detected at power-up

Maximum load	400 Watts
Load type(s)	Wired-in incandescent lighting
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
In-LineLinc Dimmer won't control the load and the Status LED is not turning on.	In-LineLinc Dimmer may not be getting power.	Make sure the circuit breaker is turned on.
		Check the junction box wires to ensure all connections are tight and no bare wires are exposed.
In-LineLinc Dimmer won't add to a scene or respond to a controller.	The controller might have been reset without removing In-LineLinc Dimmer from a scene.	Re-add In-LineLinc Dimmer to the controller.
	The INSTEON signal may be too weak.	Add additional INSTEON devices or move around existing INSTEON devices. All INSTEON devices act as INSTEON network repeaters
	Large appliances such as refrigerators or air conditioners may be producing electrical noise on the powerline.	Install a powerline noise filter (FilterLinc #1626-10) to filter electrical noise and minimize signal attenuation.
	Other electrical devices, such as computers, televisions, or power strips, may be absorbing the INSTEON signal.	
In-LineLinc Dimmer is taking a long time to respond to a controller.	The controller may be sending commands to a responder that is no longer in use. Commands for the unused responder are being resent and loading down the signal.	Remove any unused responders from the controller. HINT: If you are using home automation software such as HouseLinc, you can easily check scene membership and eliminate any unnecessary links.
		If the above doesn't work, perform a factory reset on the controller.
The load turned on by itself.	Another controller or timer could have triggered In-LineLinc Dimmer.	Perform a factory reset. See <i>Factory Reset</i> .
The controller can turn off In-LineLinc Dimmer but it doesn't turn on.	In-LineLinc Dimmer may be added to a scene at its off state.	Re-add In-LineLinc Dimmer to a scene on the controller while the load is on. See <i>Adding In-LineLinc Dimmer to a Scene as an INSTEON Responder</i> .
In-LineLinc Dimmer is locked up.	A surge or excessive noise on the powerline may have glitched it.	Temporarily remove power from In-LineLinc Dimmer, usually by opening the breaker feeding it.

If you have tried these solutions, reviewed this manual and still cannot resolve an issue you are having with In-LineLinc Dimmer, please call the INSTEON Support Line at 800-762-7845.

## Certification and Warranty

### **Certification**

This product has been thoroughly tested by Intertek 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 and Industry Canada Compliance Statement**

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS-210. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le 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 15.107 and 15.109 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

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

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

### **Limited Warranty**

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

**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](http://www.insteon.com))

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