

## Installation Instructions

*Please Read Before Installing*

## Architectural-Style Wired Maestro®

### Dimmers, Switches, and Remotes

HWA-5E-CE, HNA-5E-CE,

HWA-2ANS-CE, HNA-2ANS-CE

HA-RD-CE, HA-RS-CE

220-240 V~ 50 Hz

### Overview

The HWA-5E-CE dimmer and the HWA-2ANS-CE switch are for use with *HomeWorks* systems. The HNA-5E-CE dimmer and the HNA-2ANS-CE switch are non-system devices that allow for a matching aesthetic look for lights that are not to be controlled by the *HomeWorks* system. The dimmers and switches may be installed in either single-pole, 2-way or 3-way applications.

The dimmers may be used with the HA-RD-CE Remote Dimmer, and the switch may be used with the HA-RS-CE Remote Switch for control from up to 9 additional locations.

### Important Notes

**Codes:** Install in accordance with all local and national electrical codes.

**Breaker:** Proper short-circuit and overload protection must be provided at the distribution panel. Up to a 10 A maximum circuit breaker/MCB may be used (with adequate short-circuit breaking capacity for your installation).



**WARNING:** To avoid the risk of entrapment, serious injury, or death, these controls must not be used to control equipment which is not visible from every control location or which could create hazardous situations such as entrapment if operated accidentally. Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, garage doors, industrial doors, microwave ovens, heating pads, etc. It is the installer's responsibility to ensure that the equipment being controlled is visible from every control location and that only suitable equipment is connected to these controls.

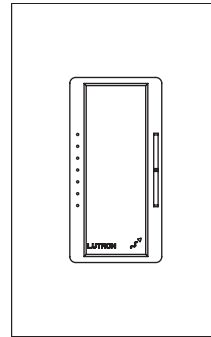
**Overheat Damage:** To reduce the risk of overheating and possibly damaging other equipment, do not install to control receptacles or motor-operated appliances.

**Environment:** Ambient operating temperature: 0 °C to 40 °C (32 °F to 104 °F), 0-90% humidity, non-condensing. Indoor use only. It is normal for dimmers and switches to feel warm to the touch during operation.

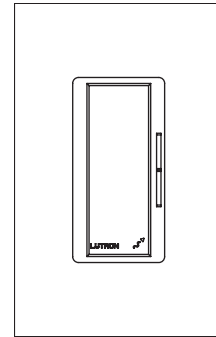
**Spacing:** If mounting one control above another, leave at least 114 mm (4½ in.) vertical space between them.

**Performance:** To ensure the best performance, the mains shall be free of noise; in particular, peak voltages exceeding 425 V, and other high frequency noises.

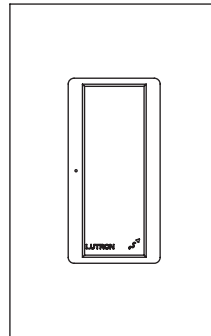
**Lamp Type:** The HWA-5E-CE and HNA-5E-CE are designed for use with permanently installed incandescent or electronic low-voltage only. HWA-2ANS-CE and HNA-2ANS-CE are designed for use with all permanently installed lighting loads.



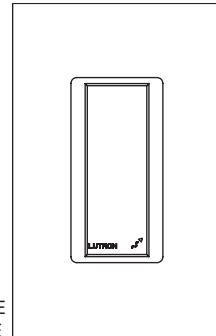
HWA-5E-CE  
HNA-5E-CE



HA-RD-CE



HWA-2ANS-CE  
HNA-2ANS-CE



HA-RS-CE

**Low-Voltage Applications:** Use HWA-5E-CE and HNA-5E-CE with electronic (solid-state) low-voltage transformers only. Not for use with magnetic (core and coil) low-voltage transformers. For an up to date list of compatible electronic transformers, see our website at: [www.lutron.com/hwi/elv\\_list](http://www.lutron.com/hwi/elv_list).

Operation of a low-voltage circuit with lamps inoperative or removed may result in transformer overheating and premature failure. Please follow these requirements:

- Do not operate low-voltage circuits without operative lamps in place.
- Replace burned-out lamps as quickly as possible.

#### Load Specifications:

Control	Min. Load	Max. Load
-5E*	50 W	500 W Inc./ELV
-2ANS	10 W	2 A

Wall type: Reduce dimmer capacity by 20% if not used in a solid masonry wall.

\* **Note:** Mixed incandescent and electronic low-voltage loads reduce load capacity an additional 100 Watts.

**Note:** The maximum number of transformers that may be connected to a single HWA-5E-CE or HNA-5E-CE is 20. Each transformer must be loaded with a minimum of 20 W.

**Wallplates:** Do not paint controls or wallplates.

**Cleaning:** To clean, wipe with a clean damp cloth. **DO NOT** use any chemical cleaning solutions.

## Important Notes - Continued

**Wallboxes:** Lutron® recommends using 89 mm (3½ in.) deep wallboxes for easier installation. Several controls may be installed in one multigang wallbox - see Derating Chart. Lutron gangable wallbox (P/N 241218) may be used.

**Remotes:** Use only Lutron HomeWorks® Maestro® Remote Dimmers (HA-RD-CE) with HWA-5E-CE and HNA-5E-CE controls. Use only Lutron HomeWorks Maestro Remote Switches (HA-RS-CE) with HWA-2ANS-CE and HNA-2ANS-CE controls. Up to 9 HA-RD-CE or HA-RS-CE controls may be used with a HomeWorks Maestro Dimmer or Switch. Mechanical 2-way or 3-way switches will not work.

## Multigang Installations

In multigang installations, several controls are grouped horizontally in one multigang wallbox.

- When combining controls in a wallbox, derating is required; however, no derating is required for Remotes.

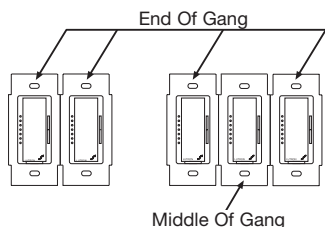
Note: Controls do not have tabs/fins that need to be removed for multigang installations.

### Derating Chart

	End of Gang	Middle of Gang
-5E*	450 W *	400 W*
-2ANS	2 A	2 A

\* Note: Mixed incandescent and electronic low-voltage loads reduces load capacity an additional 100 Watts.

### Control Location for Ganging



## Prewire for System Communications:

**HWA- controls only:** Controls have PELV terminals at the top of the control that are to be connected to the HomeWorks Dimmer Hub (HWI-H48-CE). Pull PELV wires from each wallbox location that contains a control to an HWI-H48. Use 0.5 mm<sup>2</sup> to 1.0 mm<sup>2</sup> (22 AWG to 18 AWG), twisted/ shielded, 2-conductor wire. Up to eight -5E and/or -2ANS controls may be daisy-chained, T-tapped, or home-run back to a single bus on the HWI-H48-CE.

**Note:** PELV wires do not have polarity. The daisy-chain wiring method is recommended to allow for future upgradability.

## Installation

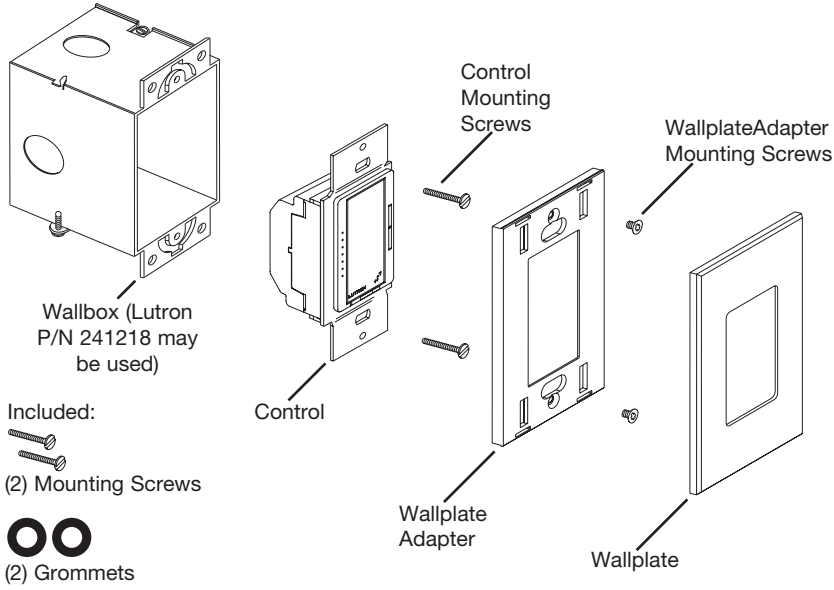


**WARNING** - To avoid the risk of electric shock, locate and remove fuse or lock circuit breaker in the OFF position before proceeding. Wiring with the power on can result in serious personal injury or death.

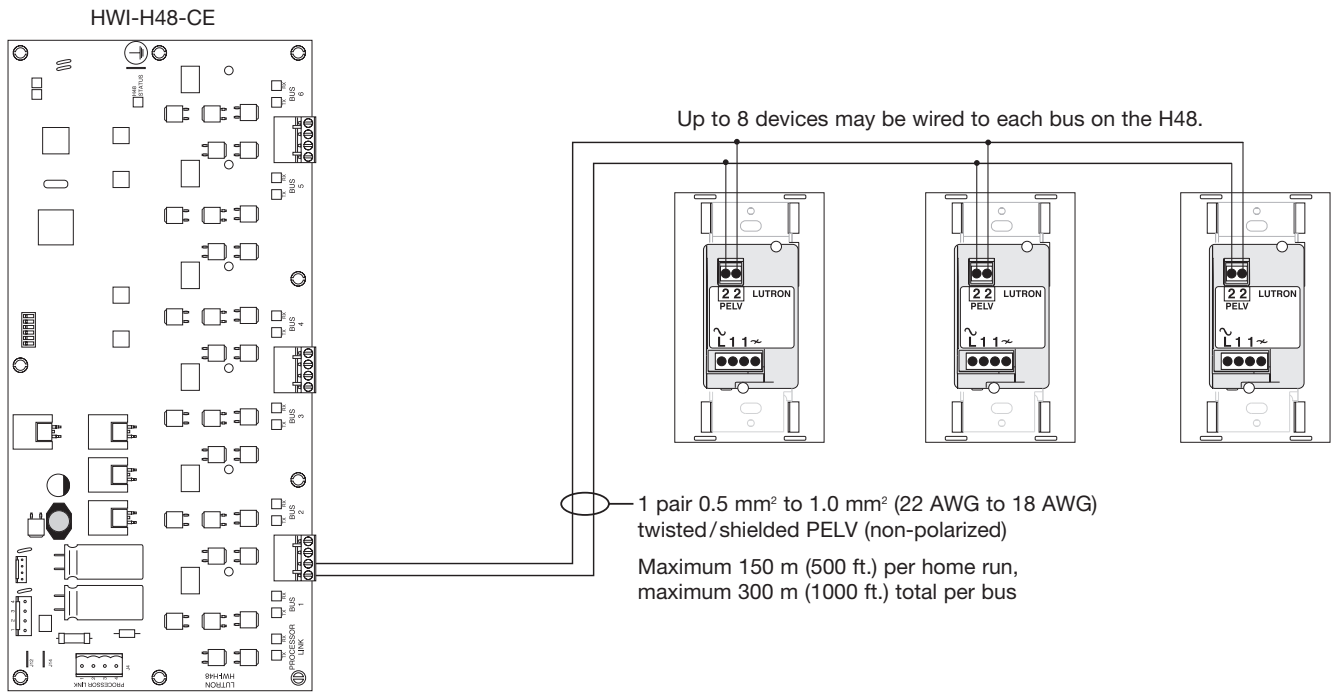
1. Turn power OFF at fusebox or circuit breaker.
2. **HWA- controls only:** Connect the PELV wiring to the PELV terminals on the back of the control. Each terminal will accept up to two 0.5 mm<sup>2</sup> to 1.0 mm<sup>2</sup> (22 AWG to 18 AWG) wires. See Low Voltage (PELV) Wiring Diagram (page 3).
3. Prepare line voltage wires. Strip insulation 8 mm (5/16 in.). Each terminal will accept one 2.5 mm<sup>2</sup> (14 AWG) wire.
4. Wire controls as follows:
 

**Single Location Installation:** See Wiring Diagram connected to the -5E or -2ANS controls.
5. Push all wires back into the wallbox and loosely fasten the control to the wallbox using the control mounting screws provided. Do not pinch the wires.
6. Attach wallplate adapter and wallplate.
  - a. Loosely install control mounting screws.
  - b. Tighten wallplate adapter mounting screws snug.
  - c. Tighten control mounting screws until wallplate adapter is flush to wall (do not over-tighten).
  - d. Snap wallplate onto wallplate adapter, and verify that control is not submerged.
  - e. If control is submerged, loosen mounting screws appropriately.
7. Restore power. Check for correct local operation (see page 6).

# Mounting Diagram

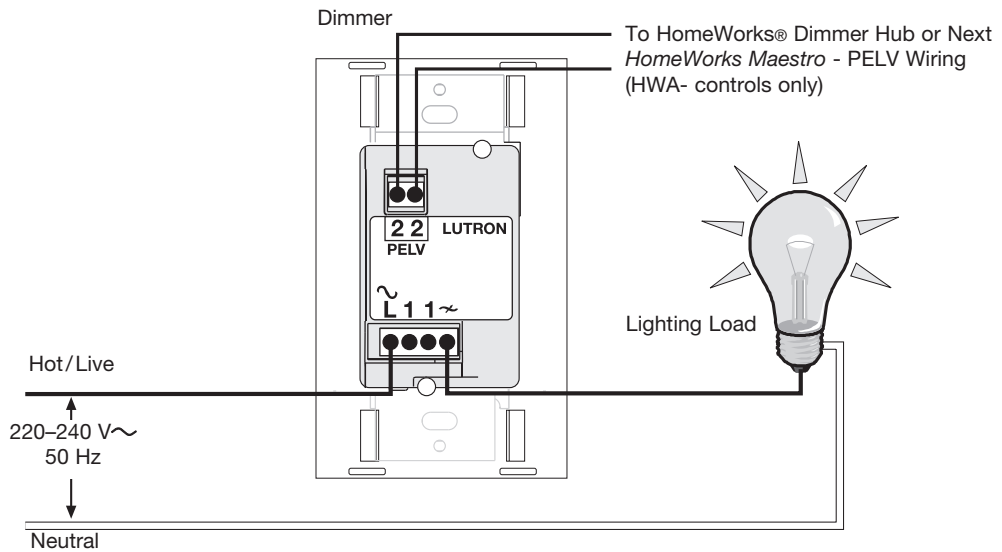


# Low-Voltage (PELV) Wiring Diagram (HWA- controls only)



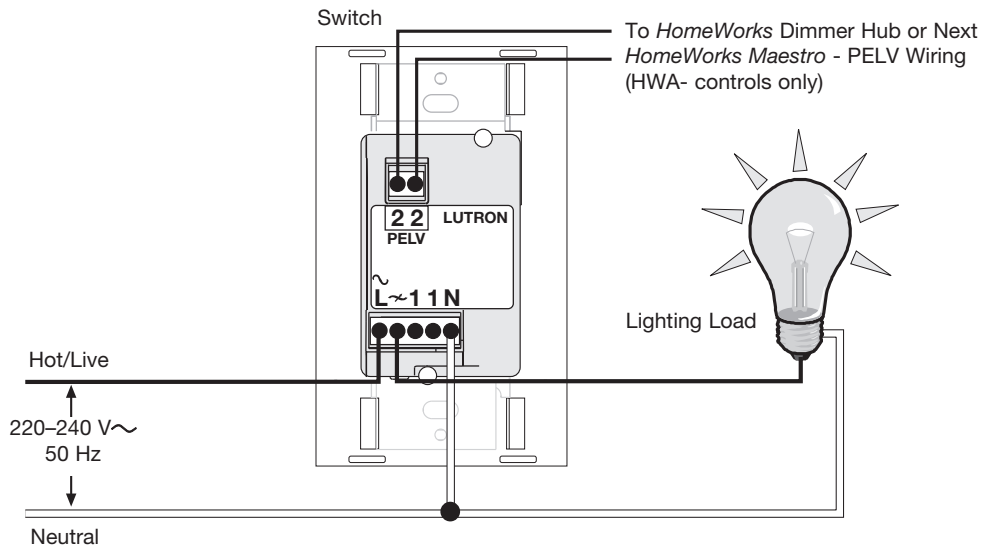
## Wiring Diagram 1

Single Location Installation<sup>1</sup>  
HWA-5E-CE, HNA-5E-CE



## Wiring Diagram 2

Single Location Installation with Neutral  
HWA-2ANS-CE, HNA-2ANS-CE

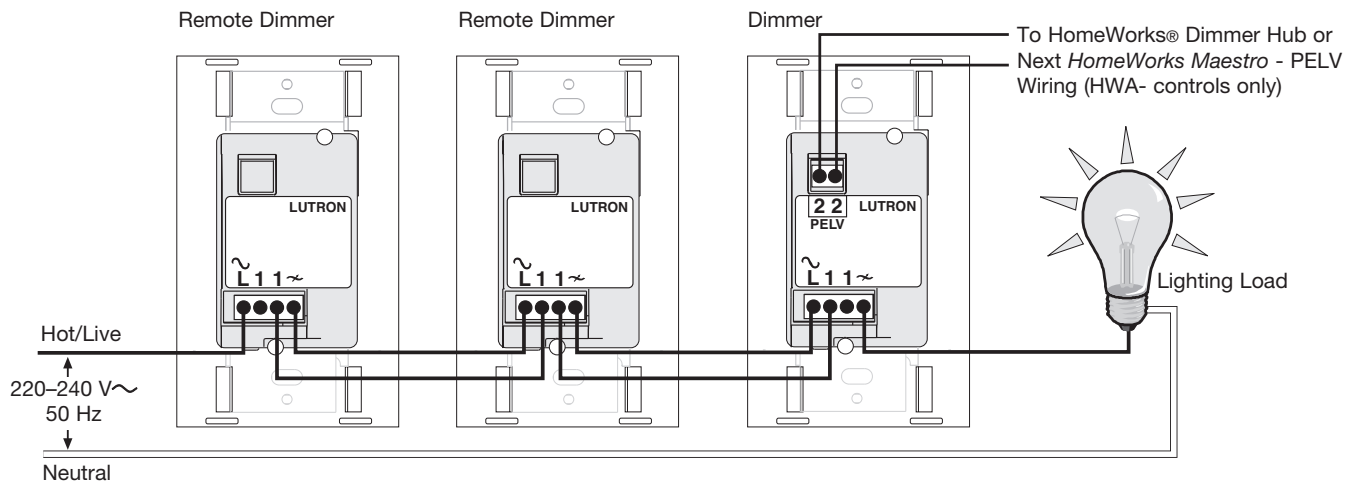


<sup>1</sup> A separate neutral connection from the load directly back to the breaker panel is required for best performance.

## Wiring Diagram 3

Multi-location Installation<sup>1,2</sup>

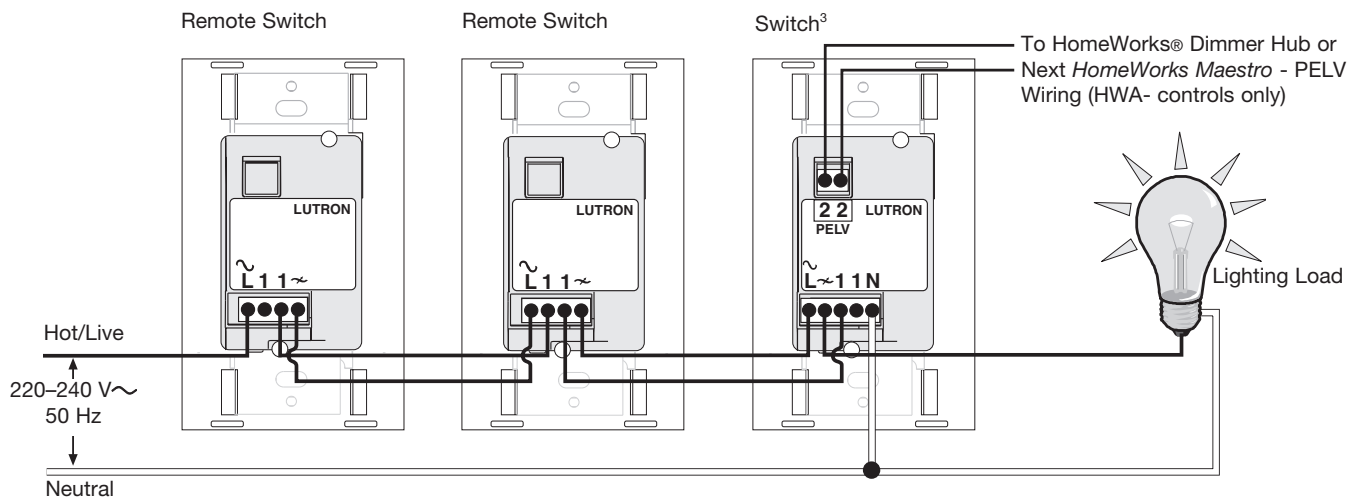
HWA-5E-CE, HNA-5E-CE with HA-RD-CE



## Wiring Diagram 4

Multi-location Installation with Neutral<sup>1,3</sup>

HWA-2ANS-CE, HNA-2ANS-CE with HA-RS-CE



<sup>1</sup> Up to 9 *HomeWorks Maestro* Remote Dimmers or Switches may be connected to the *HomeWorks Wired Maestro* Dimmer or Switch. Total Multi-location (terminals labeled 1) wire length may be up to 50 m (165 ft.).

<sup>2</sup> A separate neutral connection from the load directly back to the breaker panel is required for best performance.

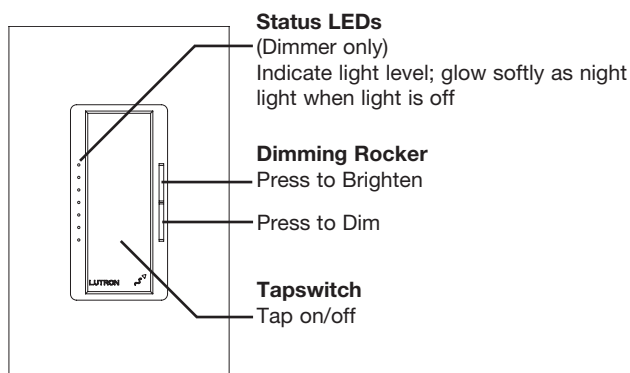
<sup>3</sup> HWA-2ANS-CE and HNA-2ANS-CE switch must be located on the Load side of a 2-way or 3-way circuit.

## Local Operation

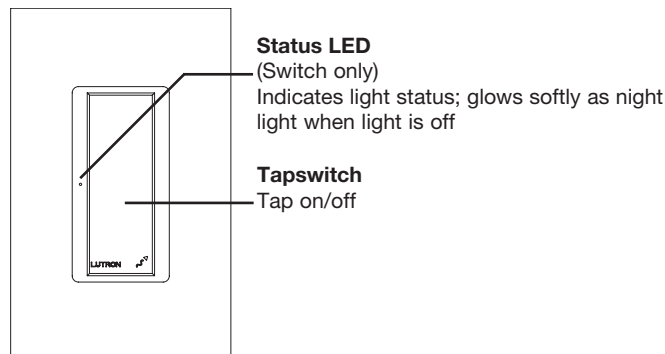
Pressing the tapswitch on any Dimmer, Switch, or Remote will alternately turn the lights ON and OFF.

For -5E and HA-RD-CE, the ON level will be the level previously set using the Dimming Rocker to the right of the tapswitch. The LED (on Dimmer only) that is glowing slightly brighter than the others indicates the level to which the lights will turn ON. Press and hold the top or bottom of the Dimming Rocker to raise or lower the light level. Double-tapping the tapswitch (on the Dimmer or the Remote) will turn the lights ON to full. Pressing and holding the tapswitch for 1/2 second (while ON) activates a 10-second long fade-to-off.

### Dimmer Operation



### Switch Operation



## Setting High/Low-End Trim (Dimmer Only)

High/Low-End levels may be adjusted with the following procedure:

- Press the Dimming Rocker to set the dimmer to the desired new High/Low-End level (>50% for high-end, <50% for low-end), and then turn OFF. Note: Middle LED cannot be used for High-End or Low-End settings.
- While *pressing and holding* the Tapswitch:
  - The dimmer will turn ON to its preset level,
  - The preset LED will light,
  - After 10 seconds, the load will turn OFF and then back ON,
  - The preset LED will begin to flash quickly (for two seconds).
- While *the LED is flashing*, release the Tapswitch. The LED will remain ON and the dimmer will be at its preset level. The High/Low-End value has been changed.

High/Low-End levels may be restored to their factory default setting with the following procedure:

- Press the Dimming Rocker to set the dimmer to >50% to reset high-end, or to <50% to reset low-end, and then turn OFF.
- While *pressing and holding* the Tapswitch:
  - The dimmer will turn ON to its preset level,
  - The preset LED will light,
  - After 10 seconds, the load will turn OFF and then back ON,
  - The preset LED will begin to flash quickly (for two seconds) and then turn OFF. Continue holding the Tapswitch for at least six seconds after the LED stops flashing.
- The load will turn OFF then back ON to its preset level. The preset LED will flash (for two seconds) and then remain ON. The default High or Low-End value has been restored.



**WARNING:** For any procedure (such as lamp replacement), power must be disconnected at the main electrical panel. Working with the power on can result in serious personal injury or death.

## Troubleshooting Guide

Symptom	Cause and Action
No lights at all	<p>Power not present</p> <ul style="list-style-type: none"> <li>• Circuit breaker OFF or tripped.</li> </ul> <p>Wiring</p> <ul style="list-style-type: none"> <li>• Wires shorted. Make sure the multi-location wires (terminals labeled 1) are not grounded or shorted to any other wires.</li> <li>• Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams.</li> </ul> <p>Lamps burned out</p> <ul style="list-style-type: none"> <li>• Replace lamps.</li> </ul> <p>Diode lamps</p> <ul style="list-style-type: none"> <li>• If diode lamps are being used, replace with non-diode lamps.</li> </ul>
Lights turn ON when tap-switch is pressed, then turn OFF	<p>Wiring</p> <ul style="list-style-type: none"> <li>• Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams.</li> </ul> <p>Tapswitch stuck</p> <ul style="list-style-type: none"> <li>• Tapswitch stuck at another location. Check to see that tapswitches are not sticking for all control locations in the circuit.</li> </ul>
Light turns ON and OFF continuously	<p>Load is less than minimum load requirement</p> <ul style="list-style-type: none"> <li>• Make sure the connected load meets the appropriate minimum load requirement for that control. See Load Specifications (page 1).</li> </ul>
Lights don't switch when tap-switch is pressed	<p>Wiring</p> <ul style="list-style-type: none"> <li>• Wires shorted. Make sure the multi-location wires (terminals labeled 1) are not grounded or shorted to any other wires.</li> <li>• Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams.</li> </ul>
Lights don't switch ON/OFF when HA-RD or HA-RS tap-switch is pressed	<p>Wiring</p> <ul style="list-style-type: none"> <li>• Wires shorted. Make sure the multi-location wires (terminals labeled 1) are not grounded or shorted to any other wires.</li> <li>• Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams.</li> </ul>
Lights don't switch ON/OFF from Keypad	<p>Non-system control (HNA- models)</p> <ul style="list-style-type: none"> <li>• HNA- model dimmers and switches cannot be controlled by the system. If system control is desired, replace with HWA- model dimmer or switch.</li> </ul> <p>Improper programming</p> <ul style="list-style-type: none"> <li>• Check programming in HomeWorks® software.</li> </ul> <p>Wiring</p> <ul style="list-style-type: none"> <li>• Wires shorted. Make sure the multi-location wires (terminals labeled 1) are not grounded or shorted to any other wires.</li> <li>• Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams.</li> </ul>
Wallplate is warm	<p>Solid-state control dissipation</p> <ul style="list-style-type: none"> <li>• Solid-state dimmers and switches internally dissipate about 2% of the total connected load. It is normal for dimmers and switches to feel warm to the touch during operation.</li> </ul>

## Technical Assistance

If you have questions concerning the installation or operation of this product, call **Lutron's Headquarters**. Please provide exact model number when calling.

### Worldwide Headquarters

#### **USA**

Lutron Electronics Co., Inc

TEL: +1.610.282.3800

FAX: +1.610.282.1243

Technical Support: 1.800.523.9466

Toll-free: 1.888.LUTRON1

www.lutron.com

### European Headquarters

#### **United Kingdom**

Lutron EA Ltd.

TEL: +44.(0)20.7702.0657

FAX: +44.(0)20.7480.6899

Technical Support: +44.(0)20.7680.4481

Freephone: 0800.282.107

www.lutron.com/europe

### Asian Headquarters

#### **Singapore**

Lutron GL Ltd.

TEL: +65.6220.4666

FAX: +65.6220.4333

Technical Support: See website for Toll-free numbers

www.lutron.com/asia

## Limited Warranty

(Valid in European Union and Asia)

### **What This Warranty Covers**

Lutron warrants each new Unit to be free from defects in materials or workmanship under conditions of normal use and specified ambient temperature when installed and operated in accordance with Lutron product specifications and applicable EU and local safety regulations.

### **What This Warranty Does Not Cover**

This warranty does not cover:

- 1) Damage or improper operation determined by Lutron to be due to abuse, misuse, or accident, such as: (a) Use of incorrect line voltages; (b) Use of incorrect fuses or breakers; (c) Failure to follow operating instructions provided by Lutron; (d) Failure to maintain and operate equipment in accordance with applicable EU and local safety regulations; (e) Failure to maintain equipment under specified ambient temperature; (f) Unauthorized or improper repairs or adjustments; (g) Vandalism; and (h) Fire, flood, "Acts of God", and other problems beyond the control of Lutron.
- 2) Labor costs to remove and reinstall electronic fixture packs and/or ballasts.
- 3) Components and equipment external to the Lutron Unit, such as: (a) Lamps; (b) Ballasts, sockets, and fixtures; (c) Wiring between ballasts and lamps; (d) Building wiring; (e) Other manufacturers' equipment, such as: 1. Time clocks; 2. Audio-visual equipment; 3. Motion detectors; 4. Photosensors; 5. Driveway sensors; 6. Pressure pads; 7. Shades; and 8. Spas.
- 4) The cost of repairing or replacing property other than the warranted Unit.

### **What Lutron Will Do**

To the extent permitted by law, Lutron will, at its option, repair or replace any Unit that is defective in materials or manufacture which, in Lutron's opinion, has been properly installed, wired, insulated, used, and maintained. Lutron shall not be required to remove, install, or re-install any defective Unit. Credit will be granted against the purchase price for replacement parts according to the following schedule:

For the first 2 years from the date of installation	100%
For years 3, 4, and 5 from the date of installation	50%
For years 6, 7, and 8 from the date of installation	25%

### **How To Get Service**

Promptly notify Lutron if you believe the Unit is defective. Send the defective Unit, postage prepaid, with a brief written description of the problem to:

Lutron EA Ltd.

Lutron House

6 Sovereign Close

Wapping, London E1W 3JF England

U.S. and International patent(s) may be pending.

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