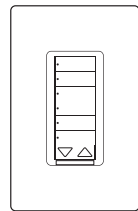


Installation Instructions
Please Read Before Installing

Use these instructions to install the model number listed above. For system Setup Guide and tools visit: www.lutron.com/radiora2



Load Type	Minimum Load		Maximum Load
	With Neutral	Without Neutral	
Incandescent ¹	15 W	50 W	450 W
MLV ²	15 W/VA	50 W/VA	350 W/450 VA

Load Specifications:

- ¹ **Load Type:** Hybrid Keypads are designed for use with permanently installed incandescent, magnetic low-voltage, or tungsten halogen only. To reduce the risk of overheating and possible damage to other equipment, do not install Hybrid Keypads to control receptacles or motor-operated appliances.
- ² **Low-Voltage Applications:** Use Hybrid Keypads with magnetic (core and coil) low-voltage transformers only. Not for use with electronic (solid-state) low-voltage transformers. Operation of a low-voltage circuit with lamps inoperative or removed may result in transformer overheating and premature failure. Lutron strongly recommends the following:
 - Do not operate low-voltage circuits without operative lamps in place.
 - Replace burned-out lamps as quickly as possible.
 - Use transformers that incorporate thermal protection or fused transformer primary windings to prevent transformer failure due to overcurrent.

Important Notes

WARNING - Entrapment hazard - 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. Failure to do so could result in serious injury or death.

Codes: Install in accordance with all local and national electrical codes.
Grounding: When no "grounding means" exist within the wallbox, then the NEC® 2008, Article 404.9 allows a dimmer without a grounding connection to be installed as a replacement, as long as a plastic, noncombustible wallplate is used. For this type of installation, cap or remove the green ground wire on the Hybrid Keypad and use an appropriate wallplate such as a Lutron® Claro® or Satin Colors® wallplate.

Neutral Wire: Hybrid Keypads have an available neutral wire terminal that can be connected to the neutral wire in a wallbox where the Hybrid Keypad is to be installed. Connecting the neutral wire to a Hybrid Keypad allows a lower minimum load to be used. Also, normal keypad operation will be available even if the attached load is not installed or if the lamp is burned out. If a neutral wire connection is available, connect it to the silver terminal. If a neutral wire connection is desired but not available in the wallbox, contact a licensed electrician for installation.

Environment: Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C), 0% to 90% humidity, non-condensing. Indoor use only.

Spacing: If mounting one control above another, leave at least 4 1/2 in (114 mm) vertical space between them.

Wallplates: Lutron Claro and Satin Colors wallplates are strongly recommended for best color match and clean aesthetic appearance. Do not paint keypads, buttons, or wallplates.

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

Wallboxes: Lutron recommends using 3 1/2 in (89 mm) deep wallboxes for easier installation. Several controls may be installed in one multigang wallbox.

Remote Dimmers: Use only Remote Dimmers (RD-RD) with Hybrid Keypads. Up to 9 RD-RD controls may be used with a Hybrid keypad.

RF Device Placement: RF dimmers, switches, keypads and shades/draperies must be located within 30 ft (9 m) of an RF signal repeater. For systems without an RF signal repeater, all RF dimmers, switches, keypads and shades/draperies must be located within 30 ft (9 m) of each other. Remote dimmers and switches are not required to be within a specific range.

Engraving: The Prepaid Engraving Certificate included with the Hybrid Keypad can be redeemed for a custom engraved replacement kit. To order a replacement kit please follow the instructions at: www.lutron.com/buttons

*Typical Power Consumption test conditions: load is off, all backlights on medium intensity, two LEDs on (two presets active), keypad powered at 120 V ~

Technical Assistance:
U.S.A./Canada: 1.800.523.9466
Mexico: +1.888.235.2910
Other Countries: +1.610.282.3800
24 hours a day, 7 days a week.

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Made and printed in the U.S.A. 04/10 P/N 044-167 Rev. A

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 Remote Dimmers.

Derating Chart

Control	Load Type	End of Gang	Middle of Gang
-H6BRL	Incandescent	350 W	250 W
	MLV	250 W/350 VA	200 W/250 VA

Installation

WARNING - Shock hazard - To avoid the risk of electric shock, locate and remove fuse or lock circuit breaker in the OFF position before proceeding. Wiring with power ON could result in serious injury or death.

- Turn power OFF at fusebox or circuit breaker.



- Check the installation for short circuits before installing control(s). With power OFF, install standard mechanical switch(es) between Hot and load. Restore power. If lights do not work or a breaker trips, check wiring. Correct wiring and check again. Install control(s) only when short is no longer present. Warranty is void if keypad is installed in a shorted circuit.

- Wire keypads according to one of the following options:

- Terminals:**
 - Trim or strip wallbox wires to the length indicated by the strip gauge on the back of the keypad.
 - Push-In Terminals: Use with 14 AWG (1.5 mm²) *solid copper wire only*. DO NOT use stranded or twisted wire. Insert wires fully. To release wire, insert small, flat screwdriver into slot below push-in terminal. Push screwdriver in while pulling wire out.
 - OR
 - Screw Terminals: use with 12 AWG (2.5 mm²) or 14 AWG (1.5 mm²) *solid copper wire only*. DO NOT use stranded or twisted wire. Wrap wire around screw terminal. Tighten securely to 5 in-lbs (0.55 N•m).

- Wire Connectors:**
 - Prepare wires. When making wire connections, follow the recommended strip lengths and combinations for the supplied wire connector.
 - Note: *Wire connector provided is suitable for copper wire only.*
 - Wire Connector:
 - Strip insulation 3/8 in (10 mm) for 14 AWG (1.5 mm²) or 12 AWG (2.5 mm²) wire
 - Strip insulation 7/16 in (11 mm) for 18 AWG (0.75 mm²) wire
 - Use to join one or two 14 AWG (1.5 mm²) or 12 AWG (2.5 mm²) wires with one 18 AWG (0.75 mm²) ground wire.



For installations WITH a neutral wire: See **Wiring Diagrams 1a or 1b**.
 For installations WITHOUT a neutral wire: See **Wiring Diagram 2a or 2b**.

Note: If a neutral wire connection is available, connect it to the silver terminal.

- Push all wires back into the wallbox and loosely fasten the Hybrid Keypad to the wallbox using the control mounting screws provided. Do not pinch the wires.

- Attach Lutron Claro or Satin Colors wallplate adapter and wallplate. See the **Mounting Diagram**.

- Install the wallplate adapter onto the front of the Hybrid Keypad.
- Tighten the keypad mounting screws until wallplate adapter is flush to the wall (do not over-tighten).
- Snap the wallplate onto the wallplate adapter and verify that the Hybrid Keypad is aligned properly.
- If the Hybrid Keypad is misaligned, remove wallplate and loosen the mounting screws to adjust the Hybrid Keypad appropriately. When the Hybrid Keypad is aligned properly, snap the wallplate onto the wallplate adapter.

- Restore power. Check for correct local operation. See **Operation**.



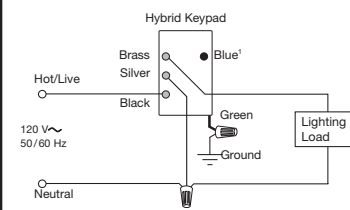
Lamp Replacement

WARNING - Shock hazard - For any procedure other than routine lamp replacement, power must be disconnected at the main electrical panel. Working with power ON could result in serious injury or even death.

For routine lamp replacement, remove power from the fixture(s) by pulling the FASS™ switch out on both the Hybrid Keypad and all Remote Dimmers

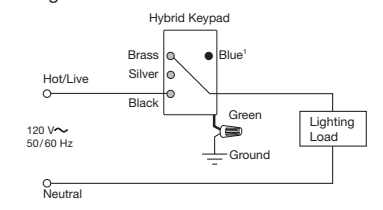
Wiring Diagram 1a

Single Location Installation with Neutral¹



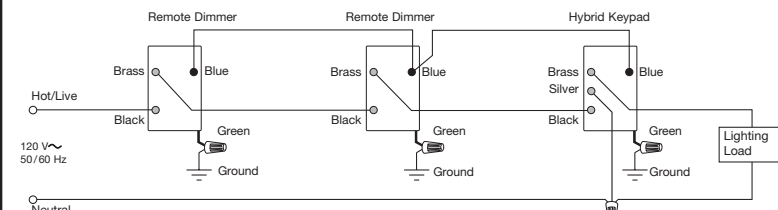
Wiring Diagram 2a

Single Location Installation without Neutral^{1, 2}



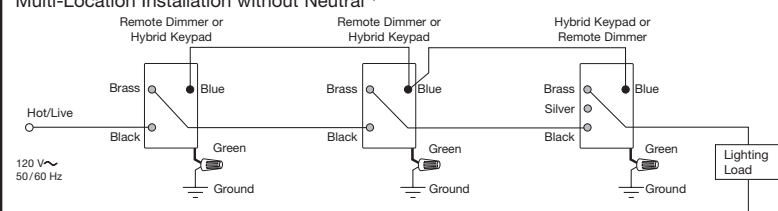
Wiring Diagram 1b

Multi-Location Installation with Neutral^{3, 4}



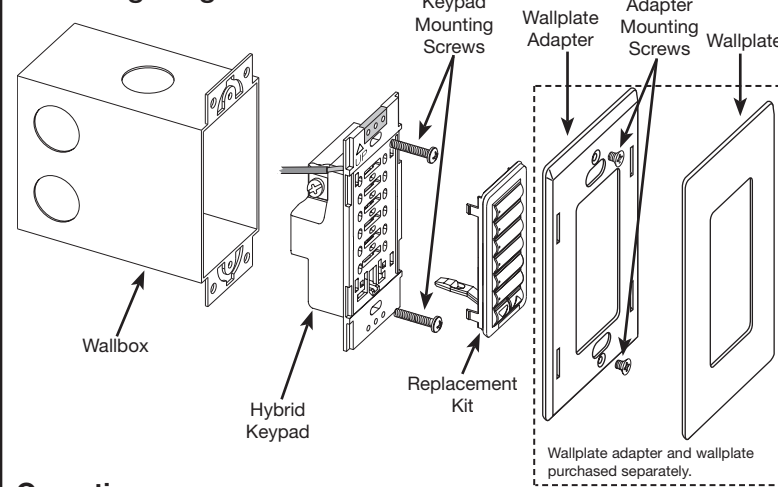
Wiring Diagram 2b

Multi-Location Installation without Neutral^{2, 3}

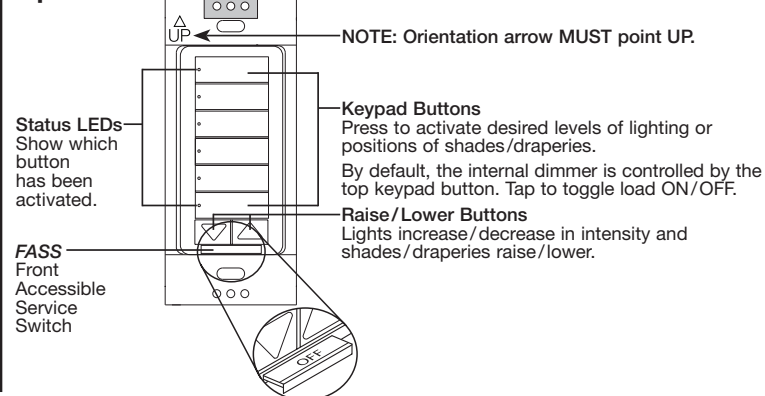


- When using controls in single location installations, tighten the blue terminal without any wires attached. DO NOT connect the blue terminal to any other wiring or to ground.
- In installations without a neutral wire connection, tighten the silver terminal without any wires attached. DO NOT connect the silver terminal to any other wiring or to ground.
- Up to 9 Remote Dimmers may be connected to the Hybrid Keypad. Total blue terminal wire length may be up to 250 ft (76 m).
- Neutral wire Hybrid Keypads must be connected on the load side of a multi-location installation.

Mounting Diagram



Operation



Troubleshooting Guide

Symptom	Probable Cause and Action
Lights do not respond to a Hybrid Keypad button press or do not go to desired levels.	<p>Power not present at keypad</p> <ul style="list-style-type: none"> Circuit breaker tripped or OFF. Reset or turn ON circuit breaker. <p>The FASS switch is pulled out.</p> <ul style="list-style-type: none"> Push FASS switch in. <p>Wiring</p> <ul style="list-style-type: none"> Wires shorted. Make sure the blue terminal is not grounded or shorted to any other wires. Wiring error. Wire the Hybrid Keypad according to the Installation section and the appropriate Wiring Diagram. <p>Lamps burned out or not installed</p> <ul style="list-style-type: none"> Replace or install lamps. <p>Dioded lamps</p> <ul style="list-style-type: none"> If dioded lamps are being used, replace with non-dioded lamps. <p>Out of RF range</p> <ul style="list-style-type: none"> Reposition to be within 30 feet (9 m) of an RF signal repeater. <p>Improper programming</p> <ul style="list-style-type: none"> Program according to the system Setup Guide.
Attached lights turn ON when top Hybrid keypad button is pressed, then turn OFF	<p>Wiring</p> <ul style="list-style-type: none"> Wiring error. Wire the Hybrid Keypad according to the Installation section and the appropriate Wiring Diagram. <p>Load is less than minimum load requirement</p> <ul style="list-style-type: none"> Make sure the connected load meets the appropriate minimum load requirement for that control. See Load Specifications. <p>Improper programming</p> <ul style="list-style-type: none"> Program according to the system Setup Guide.
All LEDs on the Hybrid Keypad flash when any button is pressed.	<p>The Hybrid Keypad is in Factory Settings mode and has not been configured to work in a system.</p> <ul style="list-style-type: none"> Follow the steps in the system Setup Guide to program the Hybrid Keypad.
Wallplate is warm	<p>Solid-state control dissipation</p> <ul style="list-style-type: none"> Solid-state Hybrid Keypads internally dissipate about 2% of the total connected load. It is normal for Hybrid Keypads to feel warm to the touch during operation.

Note: Refer to the system Setup Guide for additional troubleshooting suggestions.

Returning Hybrid Keypads to Factory Settings

Returning a Hybrid Keypad to its Factory Settings will remove it from the system and erase all dimmer settings and keypad programming.

Step 1: Triple tap any button (except raise/lower) on the Hybrid Keypad. DO NOT release after third tap.

Step 2: Keep the button pressed on the third tap until all the status LEDs start to flash slowly (approximately 3 seconds).

Step 3: Immediately release the button and triple tap the button again. The status LEDs on the Hybrid Keypad will flash quickly.

The Hybrid Keypad has now been returned to Factory Settings.

Warranty: For warranty information, please see the Warranty enclosed with the product, or visit www.lutron.com/resiinfo