RadioRA 2 Hybrid Keypads

RadioRA 2 Hybrid Keypads function as a dimmer and keypad combined into a single device. Hybrid Keypads are great for retro-fit applications since they eliminate the need to install two separate devices.

RadioRA 2 Hybrid Keypads have an available neutral wire terminal that allows them to be installed in either two-wire or neutral wire installations. 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 is available in the wallbox it should be connected to the silver teminal on the Hybrid Keypad. If a neutral wire is not available and not desired, then the silver terminal should be tightened without any wires connected to it. Hybrid Keypads can be installed in either single location or multi-location (with Remote Dimmer) installations.

RadioRA 2 Hybrid Keypads can be controlled as part of a lighting control system and incorporate advanced features such as fade on/fade off and rapid full on

RadioRA 2 Hybrid Keypads feature large, easy-to-use buttons, plus a unique backlit engraving option that makes them readable any time of the day or night. The Hybrid Keypad buttons are rounded, allowing engraving
to be displayed at an upward angle, increasing readability. RadioRA 2 Hybrid Keypads include a Front Accessible Service Switch (FASS for
safe lamp replacement.

Use only Lutron Designer (Claro or Satin Colors) wallplates. The mechanical design of the keypad is ONLY compatible with Lutron wallplates and is NOT compatible with any other manufacturer's wallplate. Wallplates are sold separately. Lutron Claro and Satin Colors wallplates snap on with no visible means of attachment. Replacement Kits are available in a variety of colors and with custom engraving to identify clearly each button's function.

RRD-H1RLD   RRD-H2RLD

RRD-H3BSRL   RRD-H3S

RRD-H4S   RRD-H5BRL

RRD-H6BRL   RD-RD

RadioRA 2 Hybrid Keypads

Model Numbers

RRD-H1RLD-XX[1]	Dual Group with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H1RLD-XX[1]-E	Engraved Replacement Kit
RRD-H2RLD-XX[1]	Dual Group with Dual Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H2RLD-XX[1]-E	Engraved Replacement Kit
RRD-H3BSRL-XX[1]	3 Button with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H3BSRL-XX[1]-E	Engraved Replacement Kit
RRD-H3S-XX[1]	3 Scene with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H3S-XX[1]-E	Engraved Replacement Kit
RRD-H4S-XX[1]	4 Scene with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H4S-XX[1]-E	Engraved Replacement Kit
RRD-H5BRL-XX[1]	5 Button with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H5BRL-XX[1]-E	Engraved Replacement Kit
RRD-H6BRL-XX[1]	6 Button with Raise/Lower Keypad and 450 W / 450 VA Two-wire or Neutral Wire Dimmer 120∿ (Incandescent / Halogen / Magnetic Low-Voltage)
RKD-H6BRL-XX[1]-E	Engraved Replacement Kit
RD-RD-XX[1]	Remote Dimmer for multi-location installations

[1] "XX" in the model number represents color/finish code. See **Colors and Finishes** at end of document.

RadioRA 2 Hybrid Keypads
Specifications

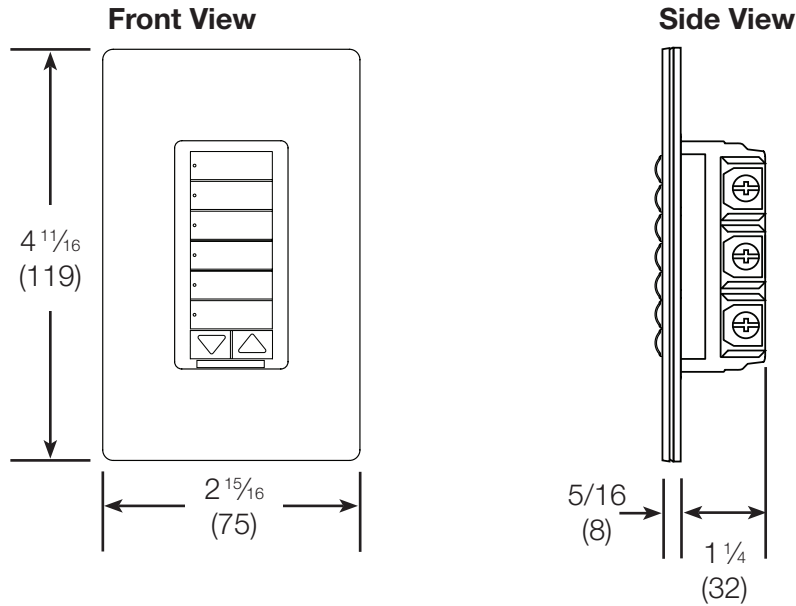|	
Model Numbers	Keypads: RRD-H1RLD-XX, RRD-H2RLD-XX, RRD-H3BSRL-XX, RRD-H3S-XX, RRD-H4S-XX, RRD-H5BRL-XX, RRD-H6BRL-XX, Engraved Replacement Kit: RKD-H1RLD-XX-E, RKD-H2RLD-XX-E, RKD-H3BSRL-XX-E, RKD-H3S-XX-E, RKD-H4S-XX-E, RKD-H5BRL-XX-E, RKD-H6BRL-XX-E Remote Dimmer: RD-RD-XX
Power	120 V∼ 50/60 Hz
Typical Power Consumption	0.75 W Test conditions: load is off, all backlights on medium intensity, two LEDs on (two presets active), keypad powered at 120 V∼.
Regulatory Approvals	UL, CSA, NOM, FCC, IC, COFETEL
Environment	Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C), 0% to 90% humidity, non-condensing. Indoor use only.
Communications	Hybrid Keypads communicate with the system through Radio Frequency (RF) and must be located within 30 ft (9 m) of a repeater. Remote dimmers are not required to be within a specific range of a repeater. System devices operate on frequencies between 431.0 MHz and 437.0 MHz.
ESD Protection	Tested to withstand electrostatic discharge without damage or memory loss, in accordance with IEC 61000-4-2.
Surge Protection	Tested to withstand surge voltages without damage or loss of operation, in accordance with IEEE C62.41-1991 Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
Power Failure	Power failure memory: should power be interrupted, the control will return to its previous state when power is restored.
Mounting	Requires a U.S. wallbox. 3 ½ in (89 mm) deep recommended, 2 ¼ in (57 mm) deep minimum. If mounting one control above another, leave at least 4 ½ in (114 mm) vertical space between them.
Wiring	Uses conventional 3-way and 4-way wiring.
Warranty	www.lutron.com/TechnicalDocumentLibrary/warranty.pdf

Design Features

- Keypad buttons are programmable to select scene or room preset levels or positions.

- At the press of a keypad button, lights fade ON or OFF to desired levels and shades/draperies open or close to desired positions.

- Adjustable backlight intensity.

- Prepaid engraving included. Redeemable for one engraved Replacement Kit.

- Internal dimmer is assigned to top button by default. Tap top button to toggle load ON/OFF.

- Internal dimmer can be assigned to any button on the Hybrid Keypad and can be programmed to be controlled by any Keypad.

- Can be installed in two-wire or neutral wire applications.

- Can be installed in either single location or multi-location (with Remote Dimmer) installations.
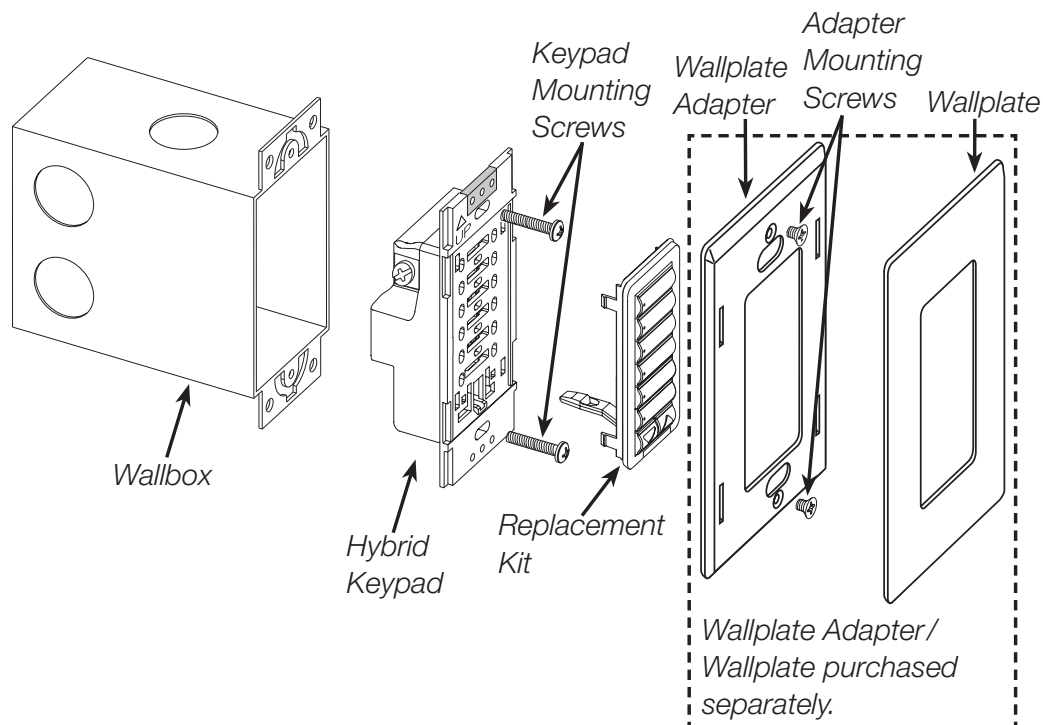
RadioRA 2 Hybrid Keypads

Dimensions

All dimensions are shown as $\frac{in}{(mm)}$

Front View

4 $^{11}\!/_{16}$
(119)

2 $^{15}\!/_{16}$
(75)

Side View

5/16
(8)

1 $\frac{1}{4}$
(32)

Mounting and Parts Identification

Keypad Mounting Screws

Adapter Mounting Screws

Wallplate Adapter

Wallplate

Wallbox

Hybrid Keypad

Replacement Kit

Wallplate Adapter / Wallplate purchased separately.

RadioRA 2 Hybrid Keypads

Load Type and Capacity

Load Type	Minimum Load		Not Ganged	End of Gang	Middle of Gang
	With Neutral	Without Neutral			
Incandescent[1]	15 W	50 W	450 W	350 W	250 W
MLV[2]	15 W / VA	50 W / VA	350 W / 450 VA	250 W / 350 VA	200 W / 250 VA

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.

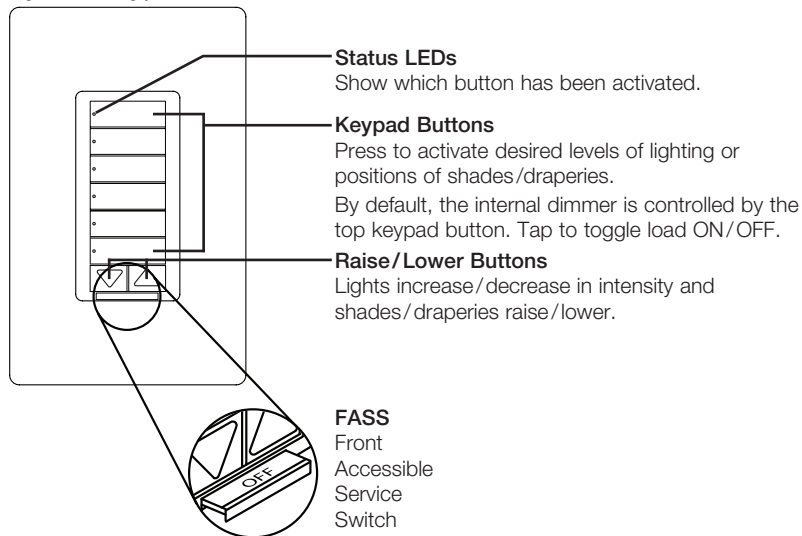### Compatible Power Boosters and Load Interfaces

Some local controls can be used to control power boosters or load interfaces. Up to three power boosters or load interfaces can be used with one control. See table below for a list of compatible power boosters and load interfaces.

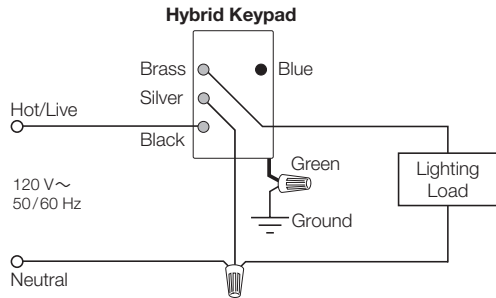| Control	Phase Adaptive Power Modules (PHPM-PA-120-WH & PHPM-PA-DV-WH)	3-wire Fluorescent Power Modules (PHPM-3F-120-WH & PHPM-3F-DV-WH)	Switched Power Module (PHPM-SW-DV-WH)	0-10 V Interface and Switching Module (GRX-TVI)
RRD-H1RLD RRD-H2RLD RRD-H3BSRL RRD-H3S RRD-H4S RRD-H5BRL RRD-H6BRL	✓	✓	✓	✓

RadioRA 2 Hybrid Keypads
Operation

Hybrid Keypad

Status LEDs
Show which button has been activated.

Keypad Buttons
Press to activate desired levels of lighting or positions of shades/draperies.

By default, the internal dimmer is controlled by the top keypad button. Tap to toggle load ON/OFF.

Raise/Lower Buttons
Lights increase/decrease in intensity and shades/draperies raise/lower.

FASS
Front Accessible Service Switch

Remote Dimmer

Tapswitch
Tap on/off

Dimming Rocker
Press to brighten

Press to dim

FASS
Front Accessible Service Switch

IMPORTANT NOTICE:
FASS – Front Accessible Service Switch
To replace bulbs, remove power by pulling the FASS out fully on all controlling devices. After replacing bulbs, push every FASS back in fully to restore power to the controls.

RadioRA 2 Hybrid Keypads
Wiring Diagrams

Single Location Installation with Neutral[1]

Hybrid Keypad

Brass — Blue
Silver
Hot/Live
Black
Green
Lighting Load
120 V~
50/60 Hz
Ground
Neutral

Single Location Installation without Neutral[1, 2]

Hybrid Keypad

Brass — Blue
Silver
Hot/Live
Black
Green
Lighting Load
120 V~
50/60 Hz
Ground
Neutral

Multi-Location Installation with Neutral[3, 4]

Remote Dimmer
Brass — Blue
Hot/Live
Black
Green
Ground

Remote Dimmer
Brass — Blue
Black
Green
Ground

Hybrid Keypad
Brass — Blue
Silver
Black
Green
Lighting Load
Ground

120 V~
50/60 Hz
Neutral

Multi-Location Installation without Neutral[2, 3]

Remote Dimmer or Hybrid Keypad
Brass — Blue
Hot/Live
Black
Green
Ground

Remote Dimmer or Hybrid Keypad
Brass — Blue
Black
Green
Ground

Hybrid Keypad or Remote Dimmer
Brass — Blue
Silver
Black
Green
Lighting Load
Ground

Note: Hybrid Keypad may be installed in any location in the circuit.

120 V~
50/60 Hz
Neutral

[1] 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.

[2] 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.

[3] 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).

[4] Neutral wire Hybrid Keypads must be connected on the load side of a multi-location installation.

RadioRA 2 Hybrid Keypads
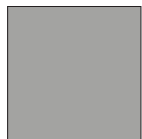## Colors and Finishes

Gloss Finishes
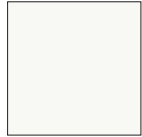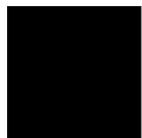
White
WH

Ivory
IV

Almond
AL

Light
Almond
LA

Gray
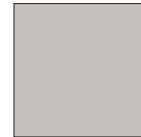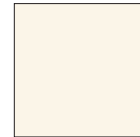GR

Brown
BR

Black
BL

Satin Finishes

Snow
SW

Midnight
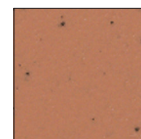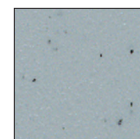MN

Taupe
TP

Biscuit
BI

Eggshell
ES

Palladium
PD

Hot
HT

Merlot
MR

Plum
PL

Sienna
SI
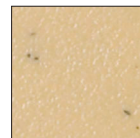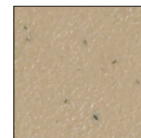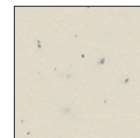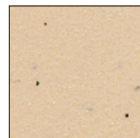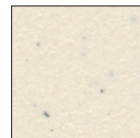
Terracotta
TC

Bluestone
BG

Greenbriar
GB

Goldstone
GS

Mocha
Stone
MS

Stone
ST

Desert Stone
DS

Limestone
LS

For the latest color offerings see our website:
http://www.lutron.com/satincolors

- Due to printing limitations, colors and finishes shown cannot be guaranteed to perfectly match actual product colors.
- Color chip keychains are available for more precise color matching:
  Gloss Finishes- DG-CK-1
  Satin Finishes - SC-CK-1

Metal Finish (wallplate only)

Stainless
Steel
SS

When using Stainless Steel wallplates, it is recommended to order the controls in Black (BL) or Midnight (MN).