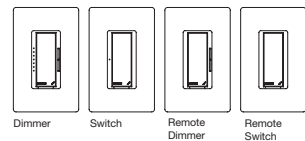


Designer-Style RF Maestro®
Dimmers: RRD-6D, RRD-10D, RRD-10ND
Switch: RRD-8ANS
Typical Power Consumption*: 0.2 W
Remote Dimmer: RD-RD
Remote Switch: RD-RS
Typical Power Consumption*: 0 W
 120 V~ 50/60 Hz

Installation Instructions

Please Read Before Installing



Use these instructions to install the model numbers listed above. For system setup instructions and tools visit www.lutron.com/radiora2

Load Specifications:

Control	Load Type	Min. Load	Max. Load
-6D ¹	Incand.	50 W	600 W
	MLV ²	50 W/VA	450 W/ 600 VA
-10D ¹	Incand.	50 W	1000 W
	MLV ²	50 W/VA	800 W/ 1000 VA
-10ND ¹	Incand.	10 W	1000 W
	MLV ²	10 W/VA	800 W/ 1000 VA
-8ANS ³	Lighting	10 W/VA	8 A
	Motor	0.08 A	1/4 HP 5.8 A
-RD	See Dimmer		8.3 A
-RS	See Switch		8.3 A

1 Dimmer Load Type: -6D, -10D and -10ND are designed for use with permanently installed incandescent, magnetic low-voltage, or tungsten halogen only. Do not install dimmers to control receptacles or motor-operated appliances.

2 Low-Voltage Applications: Use -6D, -10D and -10ND with magnetic (core and coil) low-voltage transformers only. Not for use with electronic (solid-state) low-voltage transformers.

3 Switch Load Type: -8ANS is designed for use with permanently installed incandescent, magnetic low-voltage, electronic low-voltage, or fluorescent loads and with motor loads up to 1/4 HP (5.8 A).

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 — see Derating Chart.

Remote Dimmers/Switches: Use only Lutron *Maestro* Remote Dimmers (-RD) with -6D, -10D, and -10ND controls. Use only Lutron *Maestro* Remote Switches (-RS) with -8ANS controls. Up to 9 -RD or -RS controls may be used with *Maestro* Dimmers or Switches. Mechanical 3- or 4-way switches will not work

RF Device Placement: RF Dimmers and Switches must be located within 30 feet (9 m) of an RF Signal Repeater. Remote Dimmers and Switches are not required to be within a specific range of a repeater.

For systems with an RF signal repeater, RF Dimmers or Switches cannot be controlled by the system until they are programmed in a system according to the system Setup Guide.

*Typical Power Consumption test conditions:
 Dimmer: load is off, nightlight mode enabled.
 Switch: load is off, nightlight mode enabled.
 Remote Dimmer / Switch: load is off.

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. 7/09 P/N 044-157 Rev. A

Important Notes

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. 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 dimmer and use an appropriate wallplate such as Lutron's *Claro*® or *Satin Colors*® wallplates.

Neutral Wire: -10ND and -8ANS require a neutral wire connection in the wallbox where the Dimmer/Switch is to be installed. If a neutral wire connection is 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's *Claro* and *Satin Colors* wallplates are recommended for best color match and aesthetic appearance. Do not paint controls or wallplates.

Derating Chart: See the Derating Chart for load specifications.

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

Remote Dimmers/Switches: Use only Lutron *Maestro* Remote Dimmers (-RD) with -6D, -10D, and -10ND controls. Use only Lutron *Maestro* Remote Switches (-RS) with -8ANS controls. Up to 9 -RD or -RS controls may be used with *Maestro* Dimmers or Switches. Mechanical 3- or 4-way switches will not work

RF Device Placement: RF Dimmers and Switches must be located within 30 feet (9 m) of an RF Signal Repeater. Remote Dimmers and Switches are not required to be within a specific range of a repeater.

For systems with an RF signal repeater, RF Dimmers or Switches cannot be controlled by the system until they are programmed in a system according to the system Setup Guide.

Multigang Installations

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

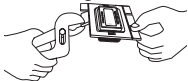
When combining controls in a wallbox, derating is required; however, no derating is required for Remote Dimmers/Switches.

Derating Chart

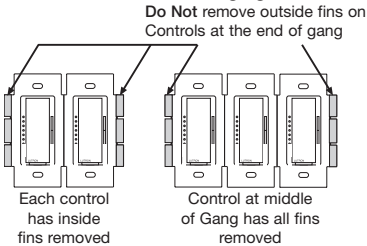
Control	Load Type	End of Gang	Middle of Gang
-6D	Incand.	500 W	400 W
	MLV	400 W/ 500 VA	300 W/ 400 VA
-10D, -10ND	Incand.	800 W	650 W
	MLV	600 W/ 800 VA	500 W/ 650 VA
-8ANS	Lighting	6.5 A	5 A
	Motor	1/4 HP 5.8 A	1/6 HP 4.4 A

Note: -8ANS controls have fins that need to be removed for multigang installations. -6D, -10D, -10ND, -RD and -RS controls do not have fins that need to be removed for multigang installations.

Removing Fins on -8ANS



Control Location for Ganging



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 power ON could result in serious injury or death.

Short Circuit Check: 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 control is turned ON with a shorted circuit.

1. Turn power OFF at fusebox or circuit breaker.

2. 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.



Twist wire connector tight.

Trim or strip wallbox wires to the length indicated by the strip gauge on the back of the control.

Push-In Terminals: Insert wires fully. To release wire, insert small, flat screwdriver into slot below push-in terminal. Push screwdriver in while pulling wire out. Push-in terminals are for use with 14 AWG (1.5 mm²) *solid copper wire only*. DO NOT use stranded or twisted wire.

OR

Screw Terminals: Wrap wire around screw terminal. Tighten securely to 5 in-lbs (0.55 N•m). Screw terminals are for use with 12 AWG (2.5 mm²) or 14 AWG (1.5 mm²) *solid copper wire only*. DO NOT use stranded or twisted wire.

3. Wire controls as follows:
 For single location installation: See **Wiring Diagrams 1 and 2.**
 For multi-location installation: See **Wiring Diagrams 3 and 4.**

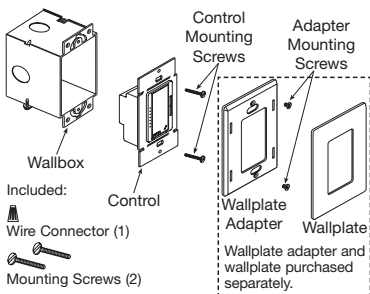
4. Push all wires back into the wallbox and loosely fasten the control to the wallbox using the control mounting screws provided. Do not pinch the wires.

5. Attach the *Lutron Claro* or *Satin Colors* wallplate adapter and wallplate.

- Install wallplate adapter onto front of control(s).
- Tighten control mounting screws until wallplate adapter is flush to wall (do not over-tighten).
- Snap wallplate onto wallplate adapter, and verify that control is aligned properly.
- If controls are misaligned, loosen mounting screws appropriately.

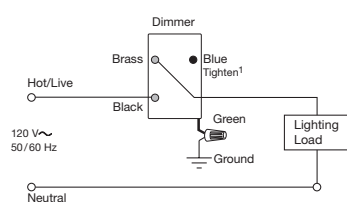
6. Restore power. Verify correct local operation (see **Dimmer Operation and Switch Operation**).

Mounting Diagram



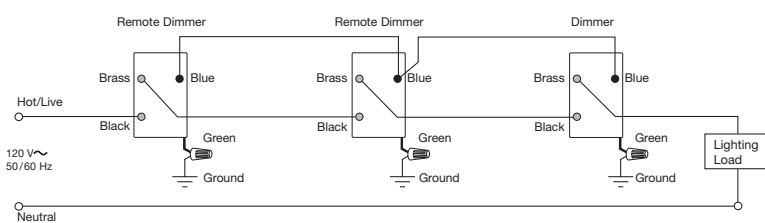
Wiring Diagram 1

Single Location Installation
 -6D, -10D



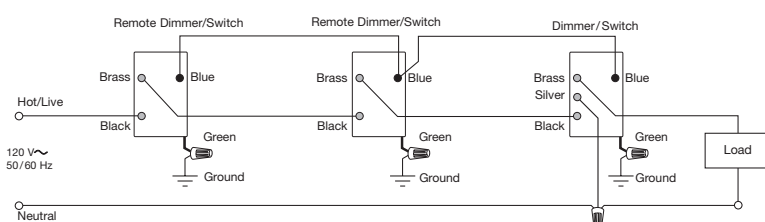
Wiring Diagram 3

Multi-Location Installation²
 -6D, -10D with RD-RD



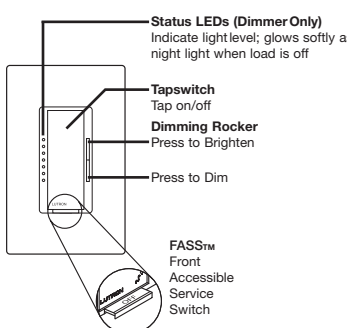
Wiring Diagram 4

Multi-Location Installation with Neutral^{2,3}
 -10ND with RD-RD, and -8ANS with RD-RS



- 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.
- Up to 9 Remote Dimmers/Switches may be connected to a Dimmer/Switch. Total blue terminal wire length may be up to 250 ft (76 m).
- Neutral wire Dimmers/Switches must be connected on the Load side of a multi-location installation.

Dimmer Operation



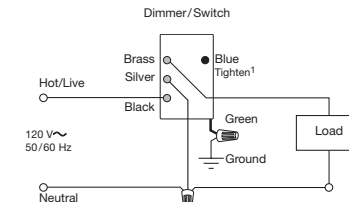
Lamp Replacement

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.

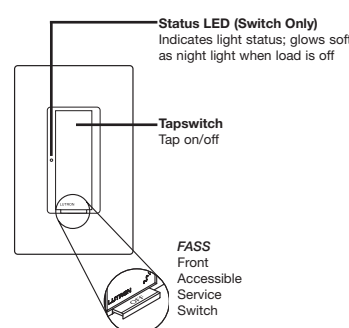
For your safety during routine lamp replacement, remove power from the fixture(s) by pulling the FASS switch out on both the Dimmer/Switch and all Remote Dimmers/Switches.

Wiring Diagram 2

Single Location Installation with Neutral
 -10ND, -8ANS



Switch Operation



Troubleshooting Guide

Symptom	Probable Cause and Action
Lights don't switch ON/OFF when Tapswitch on Dimmer/Switch/Remote is pressed	<p>Power not present</p> <ul style="list-style-type: none"> Circuit breaker OFF or tripped. Perform Short Circuit Check. FASS is in the OFF position. Move FASS to the ON position by fully pushing it in. Check both the Dimmer / Switch and all of the Remote Dimmers/Switches. <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. Check wiring to be sure it agrees with installation instructions and wiring diagrams. Installed in a neutral-based location. Check that neutral-based products are connected on the load side of a multi-location installation (see Wiring Diagram 4). <p>Lamps burned out or not installed</p> <ul style="list-style-type: none"> Replace or install lamps. <p>Diode lamps</p> <ul style="list-style-type: none"> If diode lamps are being used, replace with non-diode lamps.
Lights turn ON when Tapswitch is pressed, then turn OFF	<p>Wiring</p> <ul style="list-style-type: none"> Wiring error. Check wiring to be sure it agrees with installation instructions and wiring diagrams. <p>Tapswitch stuck</p> <ul style="list-style-type: none"> Tapswitch stuck at another location. Check to see that tapswitches are not sticking for all control locations in the circuit.
Light turns ON and OFF continuously	<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.
Lights don't switch ON/OFF from a Keypad	<p>Improper programming</p> <ul style="list-style-type: none"> Program according to the system Setup Guide. <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>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. Check wiring to be sure it agrees with installation instructions and wiring diagrams.
Wallplate is warm	<p>Solid-state control dissipation</p> <ul style="list-style-type: none"> 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.

Returning Devices to Factory Settings

Note: Returning a control to its Factory Settings will remove the control from the system and erase all programming.

- Step 1:** Triple tap the tapswitch on the control. **DO NOT** release after the third tap.
- Step 2:** Keep the tapswitch pressed on the third tap (for approximately 3 seconds) until the status LEDs start to scroll up and down quickly.
- Step 3:** Release the tapswitch and immediately triple tap the tapswitch again. The status LEDs will scroll up and down slowly.

The control has now been returned to Factory Settings.

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