

## RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> Local Controls

RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> local controls function much like standard dimmers and switches, but can be controlled as part of a lighting control system. Local lighting controls are useful in locations where single circuits of lighting need to be dimmed or switched. Local fan speed controls are useful in locations where control of a single ceiling paddle fan is needed.

RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> dimmers incorporate advanced features such as fade on/fade off, delayed long fade to off, and rapid full on.

RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> local controls include a Front Accessible Service Switch (FASS<sup>™</sup>) for safe lamp replacement. RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> local controls install in single-pole or multi-location applications. Remote dimmers/switches are available for multi-location control.

Use Lutron<sup>®</sup> Designer (Claro<sup>®</sup> or Satin Colors<sup>®</sup>) wallplates or designer-style wallplates from other manufacturers. Wallplates are sold separately. Lutron<sup>®</sup> Claro<sup>®</sup> and Satin Colors<sup>®</sup> wallplates snap on with no visible means of attachment. RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> local controls support color change kits.



*Dimmer*



*Switch*



*Fan Speed*



*Remote Dimmer*



*Remote Switch*

## RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> Local Controls

### Model Numbers

#### Dimmers

##### *Incandescent / Halogen / MLV (120 V~)*

RRD-6CL-XX	600 W / 600 VA (Incandescent / Halogen / MLV) or 150 W (CFL / LED) Two-Wire Dimmer*
RRD-6D-XX	600 W Incandescent / Halogen, 600 VA MLV
RRD-10D-XX	1000 W / 1000 VA Dimmer
RRD-10ND-XX	1000 W / 1000 VA Neutral Wire Dimmer

##### *Incandescent / Halogen / MLV / ELV (120 V~)*

RRD-6NA-XX	600 W / 600 VA Neutral Wire Adaptive Dimmer
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##### *3-Wire Fluorescent / LED (120–277 V~)*

RRD-F6AN-DV-XX	6 A Neutral Wire Dimmer
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#### Switches

##### *Lighting and Motor Loads (120 V~)*

RRD-8ANS-XX	8 A Light, 1/4 HP 5.8 A Motor Neutral Wire Electronic Switch
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##### *Lighting and Motor Loads (120–277 V~)*

RRD-8S-DV-XX	8 A Light, 1/10 HP 3 A Motor Two-Wire Electronic Switch
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#### Fan Speed Control

##### *Single ceiling paddle fan only (120 V~)*

RRD-2ANF-XX	2 A Fan Speed Control
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#### Remotes (for multi-location installations)

RD-RD-XX	Remote Dimmer (120 V~)
RD-RS-XX	Remote Switch (120 V~)
RD-RD-277-XX	Remote Dimmer (277 V~) (for use with -F6AN-DV only)
RD-RS-277-XX	Remote Switch (277 V~) (for use with -8S-DV only)

#### Color Change Kits

RK-D-XX	Dimmer (-6CL, -6D, -10D, -10ND, -6NA, -F6AN-DV)
RK-S-XX	Switch (-8ANS, -8S-DV)
RK-AD-XX	Remote Dimmer (-RD)
RK-AS-XX	Remote Switch (-RS)
RK-F-XX	Fan Speed Control (-2ANF)

\* Go to [www.lutron.com/LEDtool](http://www.lutron.com/LEDtool) to see all compatible CFL/LED lamps.

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

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## Specifications

<b>Model Numbers</b>	<b>Dimmer:</b> RRD-6CL, RRD-6D, RRD-10D, RRD-10ND, RRD-6NA, RRD-F6AN-DV <b>Switch:</b> RRD-8ANS, RRD-8S-DV <b>Fan Speed Control:</b> RRD-2ANF <b>Remote:</b> RD-RD, RD-RS, RD-RD-277, RD-RS-277
<b>Power</b>	<b>120 V~ 50/60 Hz:</b> -6CL, -6D, -10D, -10ND, -6NA, -2ANF, -8ANS, -RD, -RS <b>120-277 V~ 50/60 Hz:</b> -F6AN-DV, -8S-DV <b>277 V~ 50/60 Hz:</b> -RD-277, -RS-277
<b>Typical Power Consumption</b>	<b>Dimmer / Switch / Fan Speed Control:</b> 0.6 W Test conditions: load is off and nightlight mode is enabled. <b>Remote Dimmer / Switch:</b> 0 W Test conditions: load is off.
<b>Regulatory Approvals</b>	UL, CSA (all except -6CL and -6NA), cUL (-6CL and -6NA only), NOM, FCC, IC, COFETEL, ANATEL (all except -6NA and Remotes)
<b>Environment</b>	Ambient operating temperature: 32 °F to 104 °F (0 °C to 40 °C), 0% to 90% humidity, non-condensing. Indoor use only.
<b>Communications</b>	Dimmers and switches communicate with the system through Radio Frequency (RF) and must be located within 30 ft (9 m) of a repeater. Remote dimmers/switches 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.
<b>ESD Protection</b>	Tested to withstand electrostatic discharge without damage or memory loss, in accordance with IEC 61000-4-2.
<b>Surge Protection</b>	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.
<b>Power Failure</b>	Power failure memory: should power be interrupted, the control will return to its previous state when power is restored.
<b>Mounting</b>	Requires a U.S. wallbox. 3½ in (89 mm) deep recommended, 2¼ in (57 mm) deep minimum.
<b>Wiring</b>	Uses conventional 3-way and 4-way wiring.
<b>Warranty</b>	<a href="http://www.lutron.com/TechnicalDocumentLibrary/Warranty.pdf">www.lutron.com/TechnicalDocumentLibrary/Warranty.pdf</a>

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### Design Features

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#### Dimmer

- On a single-tap, lights fade ON or OFF.
- On a double-tap, lights go to full ON.
- When ON, press and hold the tapswitch to engage the delayed long fade to OFF.
- Light levels can be fine-tuned by pressing and holding the dimming rocker until the desired light level is reached.
- Neutral and two-wire dimmers available.

#### Switch

- On a single-tap, lights or motors turn ON or OFF.
- Neutral and two-wire switches available.

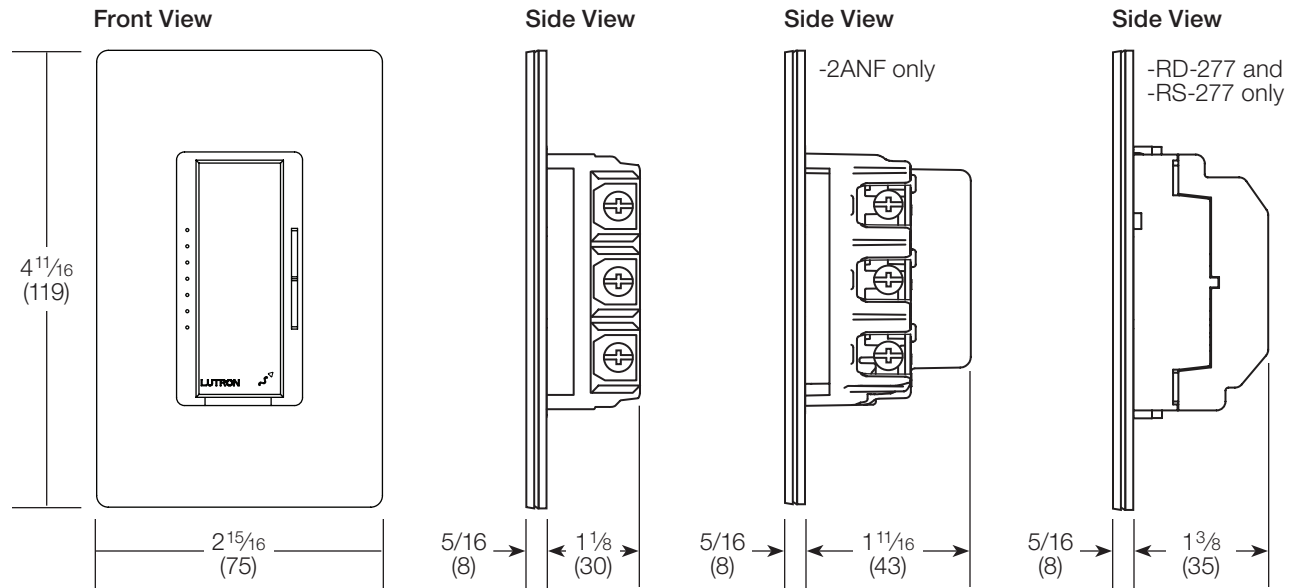
#### Fan Speed Control

- On a single-tap, fan turns ON or OFF.
- Fan speeds can be selected by pressing and holding the fan speed control rocker until the desired fan speed is reached.
- Controls one paddle-type ceiling fan (Permanent split-capacitor motor) up to 2 A. Not for use with shaded-pole type motors (e.g., bath exhaust fans).
- Provides 4 quiet speeds plus OFF.
- Not for use with fans that have integrated fan speed and/or light control modules.
- Requires a neutral connection.

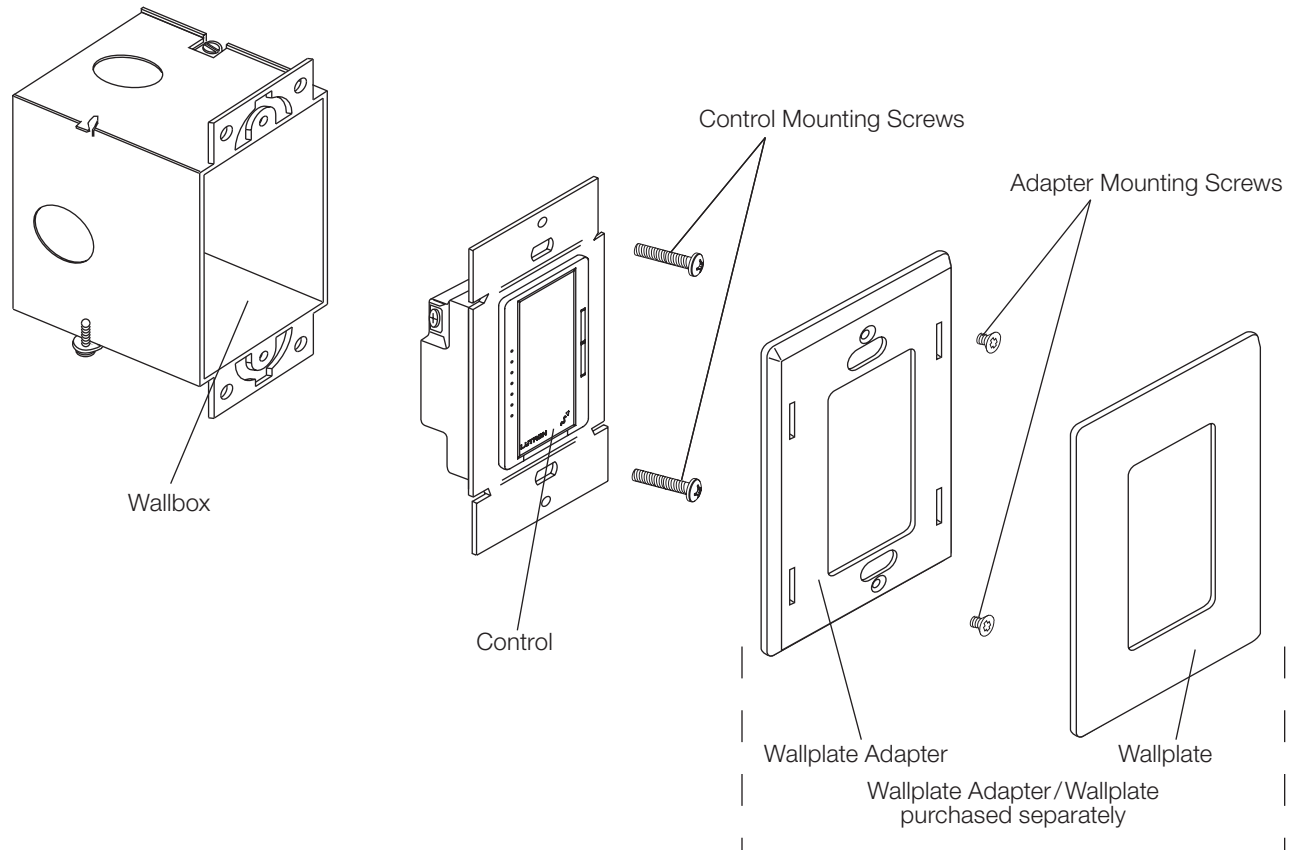
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### Dimensions

All dimensions are shown as: in (mm)



### Mounting and Parts Identification


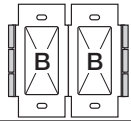
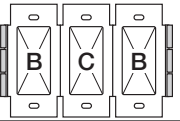


## RadioRA<sup>2</sup> Maestro<sup>2</sup> Local Controls

### Ganging and Derating

When combining controls in the same wallbox, derating is required (see **Load Type and Capacity**). No derating is required for remote dimmers, remote switches, or fan speed controls. -8ANS, -RD-277, and -RS-277 have fins that need to be removed for multigang installations.

### Load Type and Capacity

Do not remove outside fins on ends of ganged controls (shaded areas).					
Load Type	Minimum Load	A Not Ganged	B End of Gang	C Middle of Gang	Neutral Connection
<b>RRD-6CL<sup>1</sup></b>					
Incandescent/Halogen/CFL/LED	see <i>Mixing Lamp Types</i> , page 8				No
MLV <sup>2,3</sup>	50 W/VA	450 W/600 VA	400 W/500 VA	300 W/400 VA	
<b>RRD-6D<sup>1</sup></b>					
Incandescent/Halogen	50 W	600 W	500 W	400 W	No
MLV <sup>2</sup>	50 W/VA	450 W/600 VA	400 W/500 VA	300 W/400 VA	
<b>RRD-10D<sup>1</sup></b>					
Incandescent/Halogen	50 W	1000 W	800 W	650 W	No
MLV <sup>2</sup>	50 W/VA	800 W/1000 VA	600 W/800 VA	500 W/650 VA	
<b>RRD-10ND<sup>1,4</sup></b>					
LED	Varies <sup>5</sup>	150 W	150 W	150 W	Yes
Incandescent/Halogen	10 W	1000 W	800 W	650 W	
MLV <sup>2,3</sup>	10 W/VA	800 W/1000 VA	600 W/800 VA	500 W/650 VA	
<b>RRD-6NA<sup>1,4</sup></b>					
LED	Varies <sup>5</sup>	150 W	150 W	150 W	Yes
Incandescent/Halogen/ELV	5 W	600 W	500 W	400 W	
MLV <sup>2,3</sup>	5 W/VA	450 W/600 VA	400 W/500 VA	300 W/400 VA	

<sup>1</sup> Dimmer Load Type:  
 • -6CL: designed for use with permanently-installed incandescent, MLV, tungsten halogen, CFL, or LED only.  
 • -6D, -10D, -10ND: designed for use with permanently-installed incandescent, LED, MLV, or tungsten halogen only.  
 • -6NA: designed for use with permanently-installed incandescent, LED, ELV, MLV, or tungsten halogen only.  
**Note:** Do not install dimmers to control receptacles or motor-operated appliances.

<sup>2</sup> Low-Voltage Applications:  
 • -6CL, -6D, -10D, -10ND: use with magnetic (core and coil) low-voltage transformers only. Not for use with electronic (solid-state) low-voltage transformers.  
 • -6NA: use with electronic (solid-state) or magnetic (core and coil) transformers; do not mix ELV and MLV load types on a single control. 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 soon as possible.  
 • Use transformers that incorporate thermal protection or fused transformer primary windings to prevent transformer failure due to overcurrent.

<sup>3</sup> Do not mix CFL or LED loads with MLV loads.

<sup>4</sup> Power Boosters/Load Interfaces: -10ND, -6NA can be used to control power boosters/load interfaces. For a list of compatible power boosters/load interfaces see **Compatible Power Boosters and Load Interfaces**, page 8.

<sup>5</sup> Minimum load depends on lamp and is not limited to a particular wattage. Refer to the LED Product Selection Tool at [www.lutron.com/ledtool](http://www.lutron.com/ledtool)

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### Load Type and Capacity (continued)

Do not remove outside fins on ends of ganged controls (shaded areas).

Load Type	Minimum Load	A Not Ganged	B End of Gang	C Middle of Gang	Neutral Connection
<b>RRD-F6AN-DV<sup>1,2,3</sup></b>					
Fluorescent/LED Drivers	0.05 A	6 A	5 A	3.5 A	Yes
	1 ballast	60 ballasts	50 ballasts	35 ballasts	
<b>RRD-2ANF<sup>4</sup></b>					
Ceiling Fan	0.083 A	2 A	2 A	2 A	Yes
<b>RRD-8ANS<sup>1,5</sup></b>					
Lighting	10 W	8 A	6.5 A	5 A	Yes
Motor	0.08 A	1/4 HP 5.8 A	1/4 HP 5.8 A	1/6 HP 4.4 A	
<b>RRD-8S-DV<sup>5,6</sup></b>					
Lighting	40 W/VA	8 A	8 A (2-gang); 7 A (3-gang)	7 A	No
Motor	0.4 A	1/10 HP 3 A			

**Note:** Do not install dimmers to control receptacles or motor-operated appliances.

<sup>1</sup> Power Boosters/Load Interfaces: -F6AN-DV, -8ANS can be used to control power boosters/load interfaces. For a list of compatible power boosters/load interfaces see **Compatible Power Boosters and Load Interfaces**, page 8.

<sup>2</sup> Fluorescent Dimmer Load Type: -F6AN-DV: designed for use with permanently installed 3-wire 120 V~ or 277 V~ line voltage control fluorescent ballasts or LED drivers. Use with only Hi-lume<sup>®</sup>, Hi-lume<sup>®</sup> 3D, Compact SE™, Eco-10<sup>®</sup>, or EcoSystem<sup>®</sup> (H3D-, FDB-, ECO-, HL3-, EC5-, L3D). Do NOT use with any other ballasts or drivers. Do not install to control receptacles or motor-operated appliances.

<sup>3</sup> Maximum Load: The maximum load for the -F6AN-DV is either the derated load or the number of ballasts, whichever is LESS.

<sup>4</sup> Ceiling Fan Application: -2ANF

- Use to control one paddle-type ceiling fan (permanent split-capacitor).
- Use the ceiling fan's pull chain to set its speed to the highest setting.
- Do not use to control fans that use shaded-pole motors (e.g., bath exhaust fans).
- Do not use to control fans that have integrated fan speed controls (e.g., fans that have a remote control) unless the integrated control is removed from the ceiling fan.
- Do not connect to any other motor-operated appliance or to any lighting load type.
- Do not use to control a fan lighting load (e.g., light kit).

<sup>5</sup> Switch Load Type:

- -8ANS, -8S-DV: designed for use with permanently installed 120 V~ incandescent, MLV, ELV, tungsten halogen, fluorescent, CFL, LED, or motor loads.

- -8S-DV can also be used with permanently installed 277 V~ MLV or fluorescent loads.

<sup>6</sup> Shunt Capacitor: Some -8S-DV installations may require the use of a shunt capacitor; this is especially necessary for load types sensitive to leakage current (e.g., fluorescent ballasts). If load flickers, install a shunt capacitor. Optional shunt capacitor must be installed inside the load fixture or in a separate J-box. For shunt capacitor installation see Wiring Diagram 4, 9, or 10.

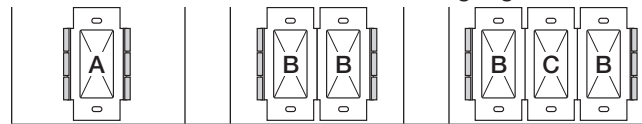
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### Mixing Lamp Types

Mixing lamp types (using a combination of CFL/LED, Incandescent/Halogen bulbs) and ganging with other dimmers or electronic switches may reduce maximum wattage as shown in the chart below.

Example: If fins from one side of dimmer are removed and you have two 24 W bulbs installed (total CFL Wattage = 48 W), you may add up to 300 W of incandescent/halogen lighting.

Do not remove outside fins on ends of ganged controls (shaded areas).



Total CFL/LED Wattage	Total Incandescent/Halogen Wattage			
	A Not Ganged	B End of Gang	C Middle of Gang	Neutral Connection
<b>RRD-6CL<sup>1,2</sup></b>				
0 W	+ 50 W–600 W	Or 50 W–500 W	Or 50 W–400 W	No
1 W–25 W	+ 0 W–500 W	Or 0 W–400 W	Or 0 W–300 W	
26 W–50 W	+ 0 W–400 W	Or 0 W–300 W	Or 0 W–200 W	
51 W–75 W	+ 0 W–300 W	Or 0 W–200 W	Or 0 W–100 W	
76 W–100 W	+ 0 W–200 W	Or 0 W–100 W	Or 0 W–50 W	
101 W–125 W	+ 0 W–100 W	Or 0 W–50 W	Or 0 W	
126 W–150 W	+ 0 W	Or 0 W	Or 0 W	

<sup>1</sup> Dimmer Load Type -6CL is designed for use with permanently-installed incandescent, CFL, LED, MLV, or tungsten halogen only. Do not install dimmers to control receptacles or motor-operated appliances.

<sup>2</sup> Do not mix CFL and LED loads with MLV loads.

### 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 controls and 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-10ND	✓	✓	✓	✓
RRD-6NA	✓	✓	✓	✓
RRD-F6AN-DV <sup>1</sup>	✓	✓	✓	✓
RRD-8ANS			✓ preferred	

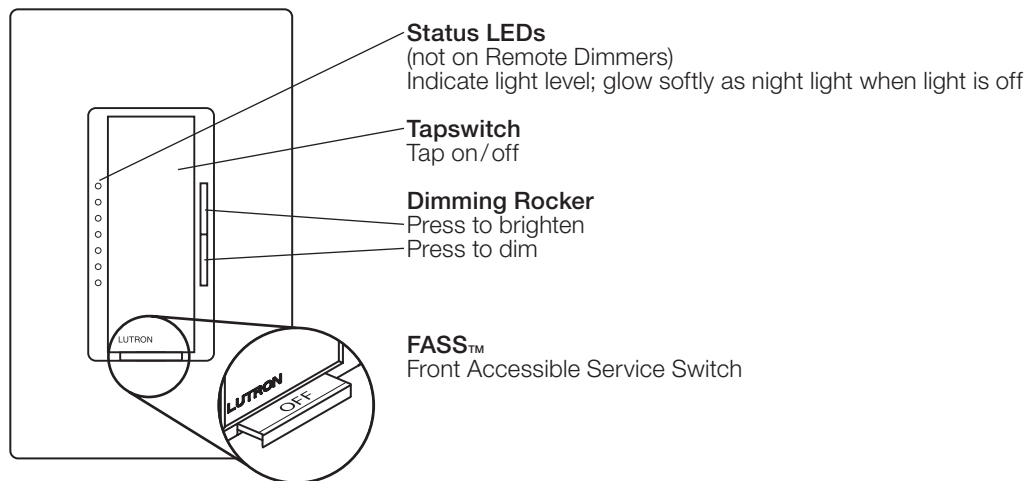
<sup>1</sup> Only the GRX-TVI is compatible with the RRD-F6AN-DV at 277 V~. All other power modules are 120 V~ only.



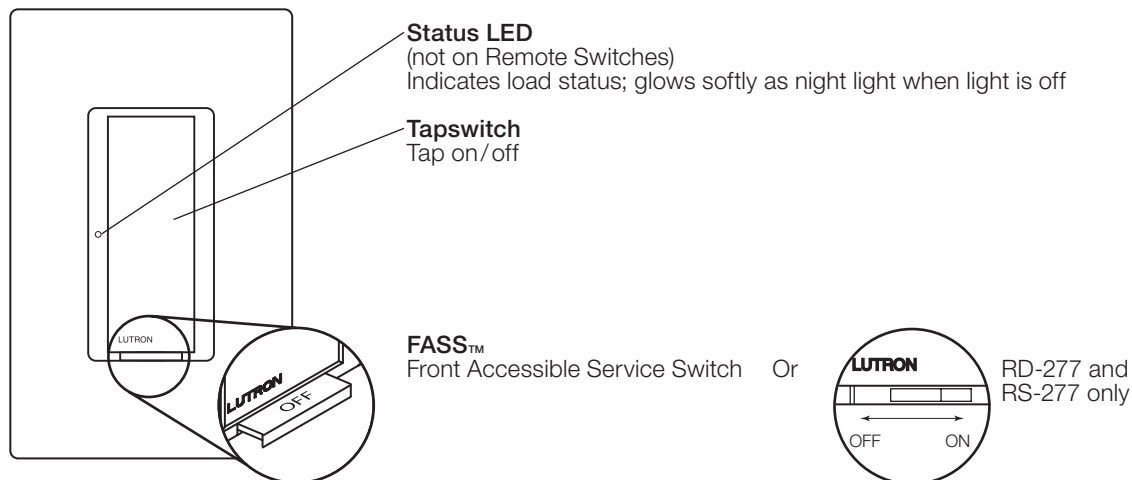
## RadioRA<sup>2</sup> Maestro<sup>®</sup> Local Controls

### Operation

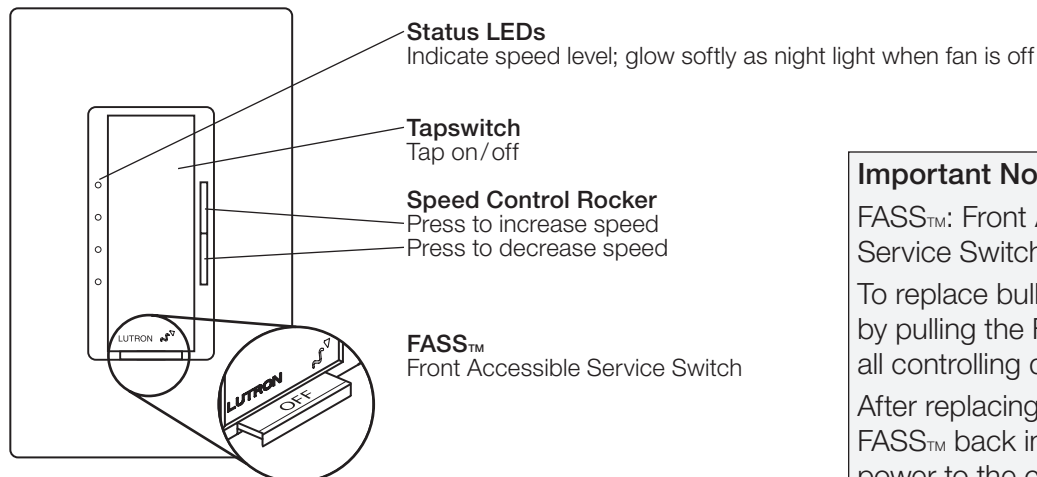
#### Dimmer



#### Switch



#### Fan Speed Control



#### Important Notice

FASS™: Front Accessible Service Switch

To replace bulb, remove power by pulling the FASS™ out fully on all controlling devices.

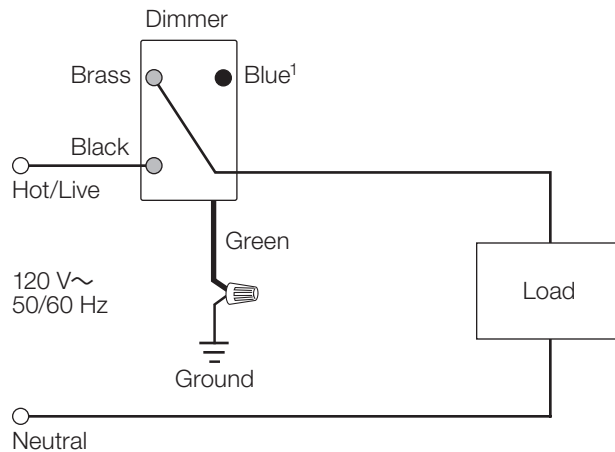
After replacing bulb(s), push the FASS™ back in fully to restore power to the control(s).

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### Wiring Diagrams

#### Wiring Diagram 1

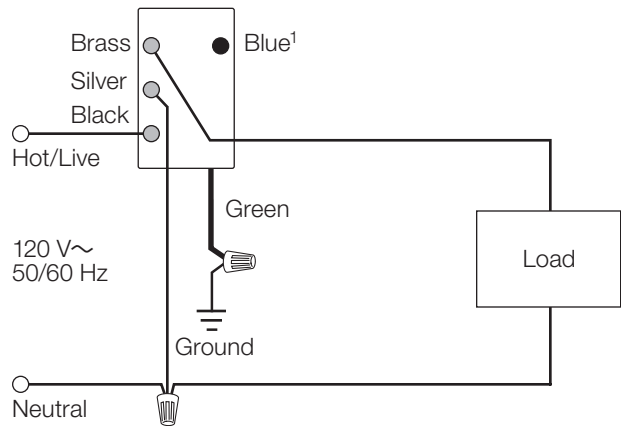
Single-Location Installation without Neutral<sup>1</sup>  
-6CL, -6D, -10D



#### Wiring Diagram 2

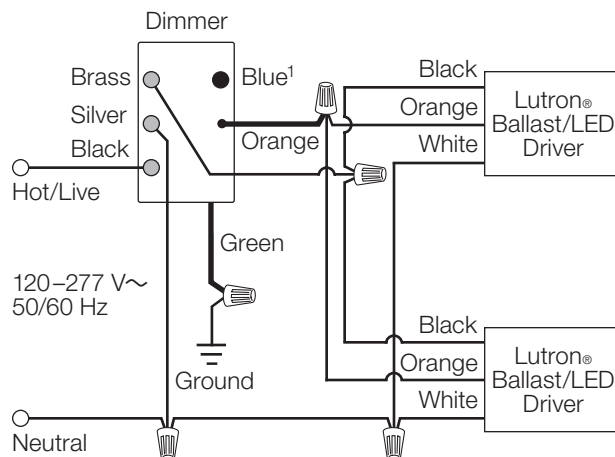
Single-Location Installation with Neutral<sup>1</sup>  
-10ND, -6NA, -2ANF, -8ANS

Dimmer/Switch/Fan Speed Control



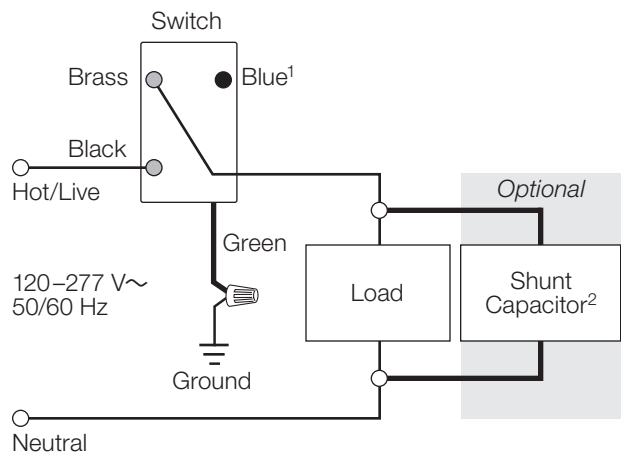
#### Wiring Diagram 3

Single-Location Fluorescent Dimmer Installation<sup>1</sup>  
-F6AN-DV with Lutron<sup>®</sup> Ballast/LED Driver



#### Wiring Diagram 4

Single-Location 2-Wire Switch Installation<sup>1</sup>  
-8S-DV with Optional Shunt Capacitor<sup>2</sup>



**Note:** Bolded lines in diagrams indicate leads on products.

- <sup>1</sup> When using controls in single-location installations, tighten the blue terminal. Do not connect the blue terminal to any other wiring or to ground.
- <sup>2</sup> Optional Shunt Capacitor must be installed inside the load fixture or in a separate J-box. Shunt capacitor is included with -8S-DV.

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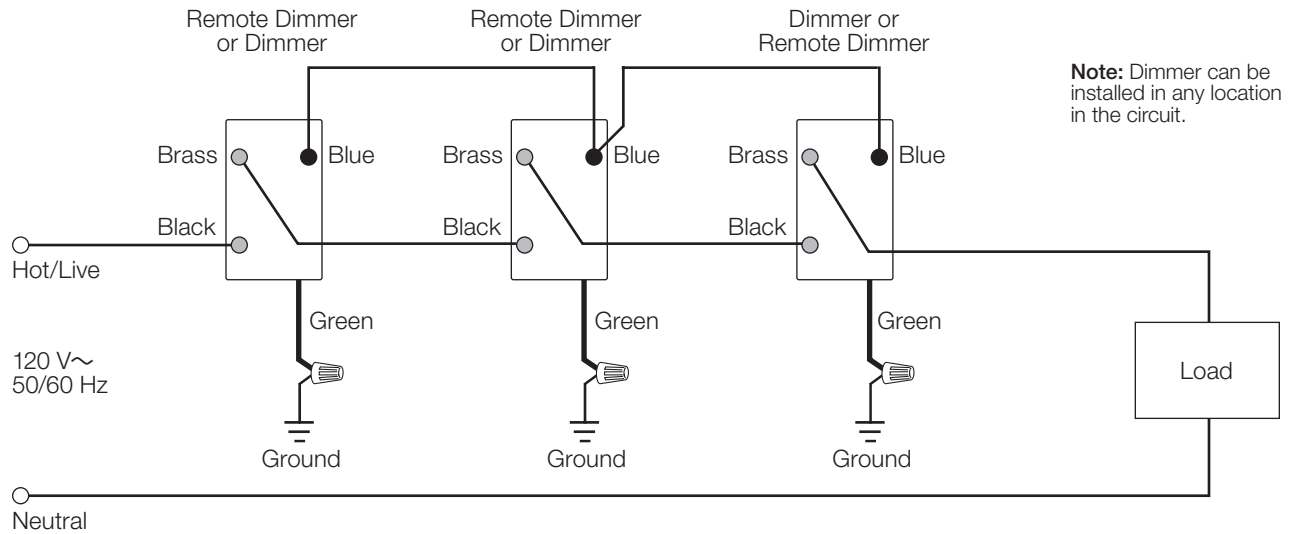
## RadioRA<sup>®</sup> 2 Maestro<sup>®</sup> Local Controls

### Wiring Diagrams (continued)

#### Wiring Diagram 5

Multi-Location Installation without Neutral<sup>1</sup>

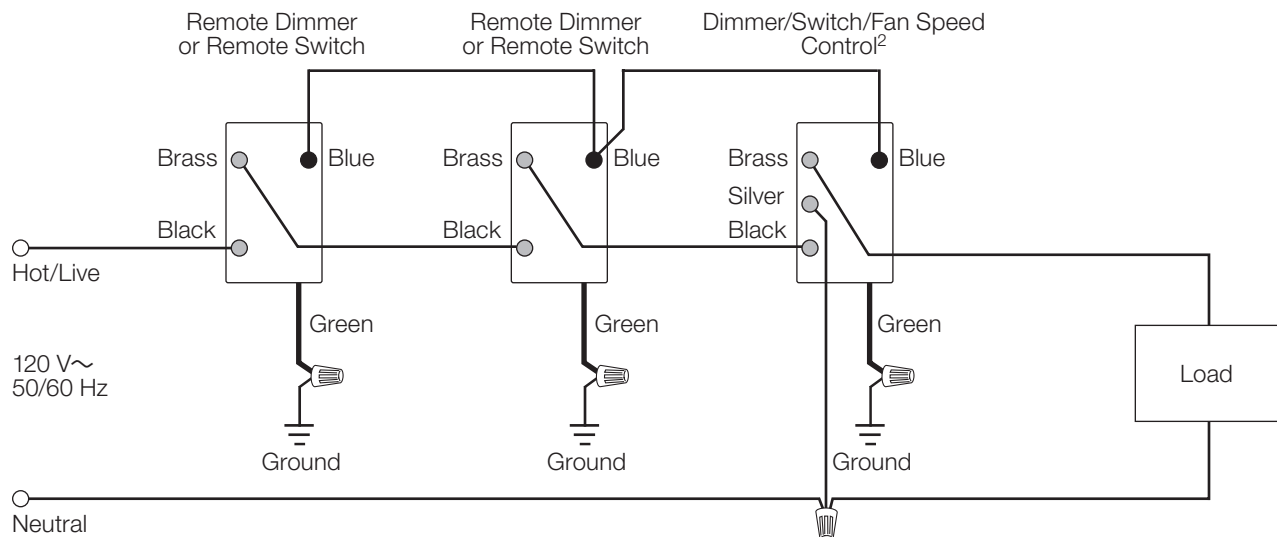
-6CL, -6D, and -10D with RD-RD



#### Wiring Diagram 6

Multi-Location Installation with Neutral<sup>1,2</sup>

-10ND, -6NA, and -2ANF with RD-RD; -8ANS with RD-RS



**Note:** Bolded lines in diagrams indicate leads on products.

- <sup>1</sup> Up to 9 Remote Dimmers/Remote Switches may be connected to the Dimmer/Switch/Fan Speed Controls. Total blue terminal wire length may be up to 250 ft (76 m).
- <sup>2</sup> Neutral-Wire Dimmers/Switches/Fan Speed Controls must be connected on the Load side of a multi-location installation.

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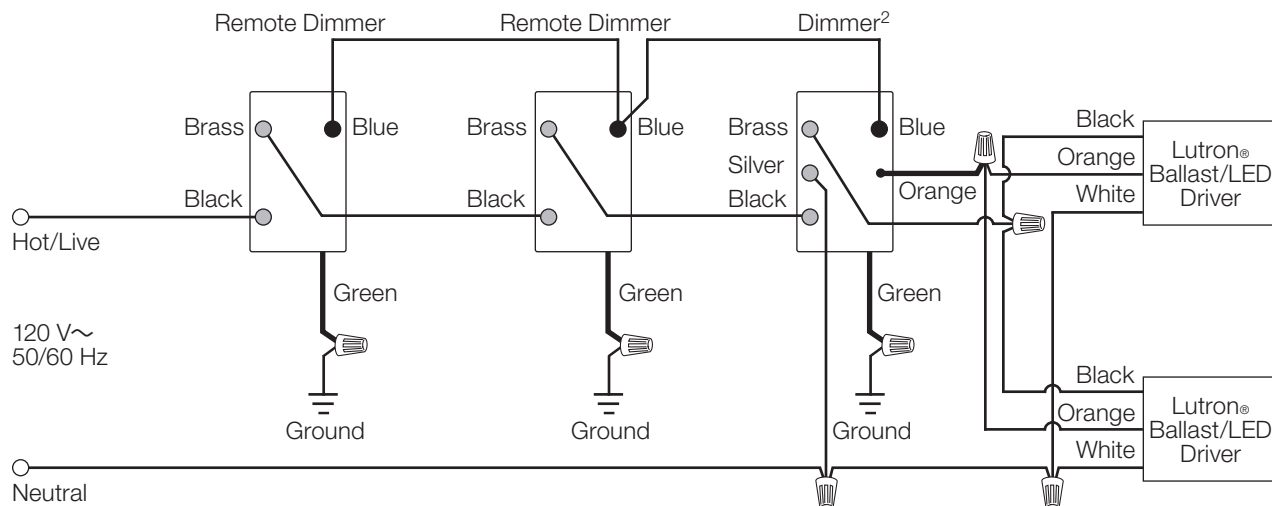
## RadioRA<sup>2</sup> Maestro<sup>®</sup> Local Controls

### Wiring Diagrams (continued)

#### Wiring Diagram 7

Multi-Location Fluorescent Dimmer Installation<sup>1,2</sup> (120 V~)

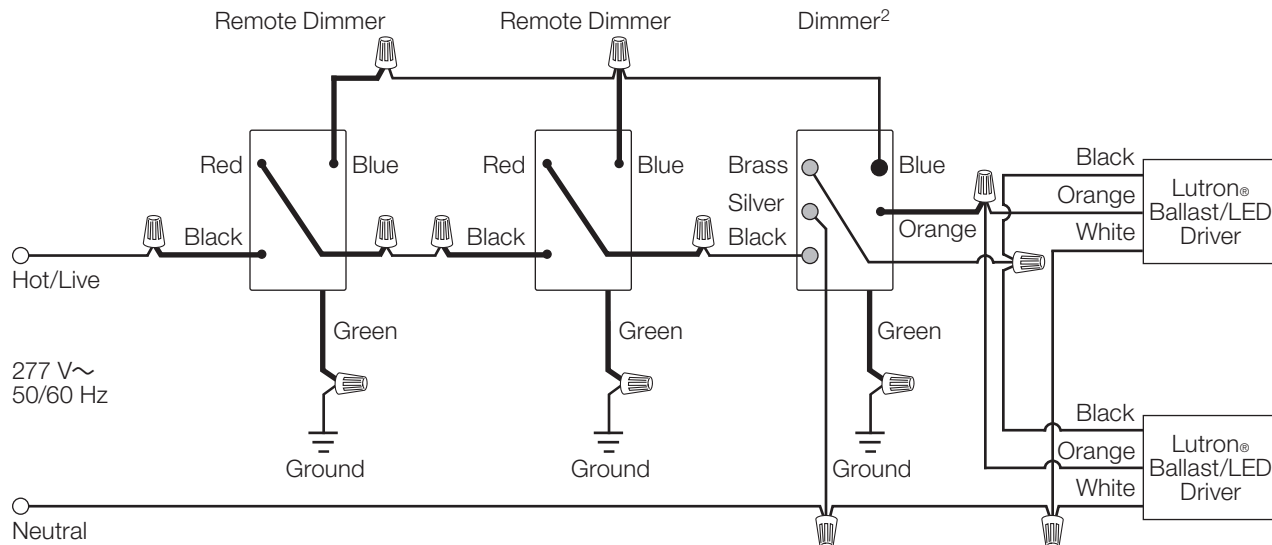
-F6AN with RD-RD and Lutron<sup>®</sup> Ballast/LED Driver



#### Wiring Diagram 8

Multi-Location Fluorescent Dimmer Installation<sup>1,2</sup> (277 V~)

-F6AN with RD-RD-277 and Lutron<sup>®</sup> Ballast/LED Driver



**Note:** Bolded lines in diagrams indicate leads on products.

- <sup>1</sup> Up to 9 Remote Dimmers/Remote Switches/Fan Speed Controls may be connected to the Dimmer/Switch. Total blue terminal wire length may be up to 250 ft (76 m).
- <sup>2</sup> Neutral-Wire Dimmers/Switches/Fan Speed Controls must be connected on the Load side of a multi-location installation.

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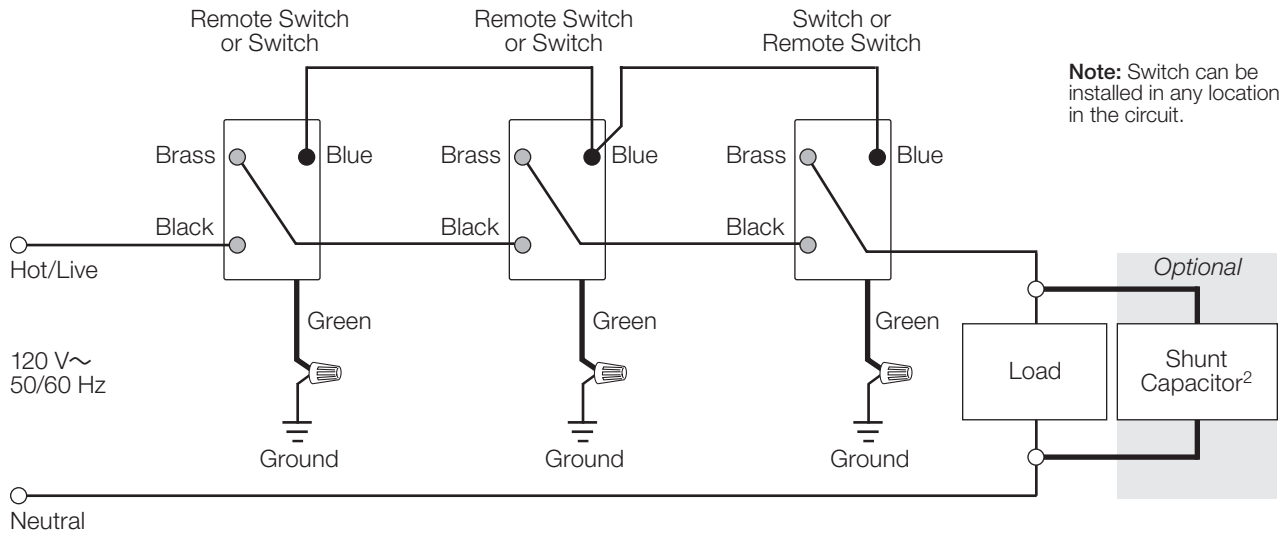
## RadioRA<sup>2</sup> Maestro<sup>2</sup> Local Controls

### Wiring Diagrams (continued)

#### Wiring Diagram 9

Multi-Location 2-Wire Switch Installation<sup>1</sup> (120 V~)

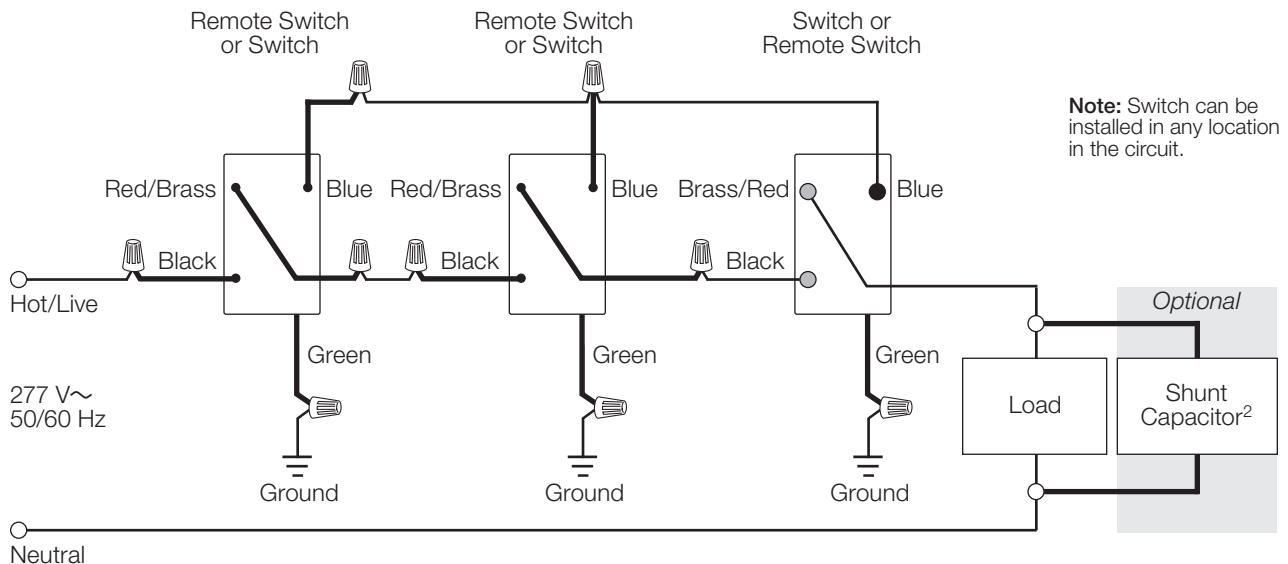
-8S-DV with RD-RS and Optional Shunt Capacitor



#### Wiring Diagram 10

Multi-Location 2-Wire Switch Installation<sup>1</sup> (277 V~)

-8S-DV with RD-RS-277 and Optional Shunt Capacitor



**Note:** Bolded lines in diagrams indicate leads on products.

- <sup>1</sup> Up to 9 Remote Dimmers/Remote Switches/Fan Speed Controls may be connected to the Dimmer/Switch. Total blue terminal wire length may be up to 250 ft (76 m).
- <sup>2</sup> Optional Shunt Capacitor must be installed inside the load fixture or in a separate J-box. Shunt capacitor is included with 8S-DV.

## RadioRA<sup>2</sup> Maestro<sup>®</sup> Local Controls

### Colors and Finishes

#### Gloss Finishes



White  
WH



Ivory  
IV



Almond  
AL



Light Almond  
LA



Gray  
GR



Brown  
BR



Black  
BL

#### Satin Finishes



Hot  
HT



Merlot  
MR



Plum  
PL



Turquoise  
TQ



Taupe  
TP



Eggshell  
ES



Bizcocho  
BI



Snow  
SW



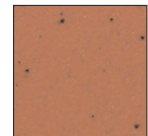
Palladium  
PD



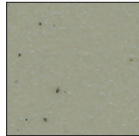
Midnight  
MN



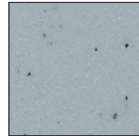
Sienna  
SI



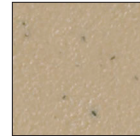
Terracotta  
TC



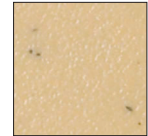
Greenbriar  
GB



Bluestone  
BG



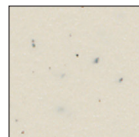
Mocha Stone  
MS



Goldstone  
GS



Desert Stone  
DS



Stone  
ST



Limestone  
LS

- 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 that you order the control in Midnight (MN).