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Maestro PRO LED+ Dimmer

Phase-selectable dimmer for LED, ELV, MLV and incandescent lamp loads.



Wallplate sold separately

Features

- Large tapswitch with a rocker-style dimmer for a standard designer wallplate opening.
- Advanced dimming technology designed for compatibility with a broader range of high-efficacy bulbs.
- UL Listed to control:
  - Dimmable LED with integrated driver
  - Electronic Low-Voltage (ELV)
  - Magnetic Low-Voltage (MLV)
  - Dimmable compact fluorescent lamps (CFLs) with integrated ballast
  - Incandescent and halogen
  - Philips Advance Mark 10® ballasts
  - Hi-lume 1% 2-Wire (LTE) LED driver
- Low-end adjustment to accommodate a wide range of bulbs.
- Can be used in single-pole or in multi-location (using MA-R) applications.
- Coordinating Claro and stainless steel wallplates available separately.
- 100% factory-tested.

Product Specific Features

- NEMA SSL-7A-2015 compliant (in forward-phase mode)
- Neutral optional - See **Load Type and Capacity** table on page 5
- RTISS Equipped circuitry compensates in real time for incoming line-voltage variations (neutral connection required)
- Capable of controlling up to 250 W dimmable LED or 500 W incandescent/halogen or mixed bulb type per **Multigang and Mixed Bulb Type Ratings** table (see page 5)
- Capable of controlling up to 500 W of ELV or 400 VA of MLV or up to 20 Hi-lume 1% 2-Wire (LTE) LED drivers
- UL Listed for field interchangeable plastics

Model Number

MA-PRO-XX[1]	Single-pole/3-way[2]/Multi-location

Color Change Kit Model Numbers

MK-D-XX[1, 3]	1 Piece Color Change Kit
MK-D-5-XX[1, 3]	5 Piece Color Change Kit

[1] "XX" in the model number represents color/finish code. See **Colors and Finishes** on page 4.

[2] For 3-way and 4-way dimming, Maestro companion dimmers must be used.

[3] Color change kits do not include wallplates.

Job Name:	Model Numbers:	
Job Number:		

Specifications

Regulatory Approvals

- UL Listed to U.S. and Canadian safety requirements (UL 1472/CSA C22.2 184.1)
- NOM
- NEMA SSL-7A-2015 forward phase compliant

Power and Ratings

- 120 V~ 50/60 Hz
- Maximum Load
  – 250 W Dimmable LED
  or
  – 500 W incandescent/halogen/ELV
  or
  – 400 VA MLV
  or
  – 20 Lutron Hi-lume 1% 2-Wire (LTE) LED drivers
  or
  – Mixed bulb type per **Multigang and Mixed Bulb Type Ratings** table (see page 5)
- Minimum Load
  – See approved lamp list for LED at www.lutron.com/LEDfinder

Environment

- For indoor use only
- Operating temperatures 32 °F (0 °C) to 104 °F (40 °C)
- Relative humidity: 0% to 90% non-condensing

Performance

- Power failure memory: Should power be interrupted, the control will return to its previous state when power is restored.
- 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.
- Tested to withstand electrostatic discharge without damage or memory loss.
- For 3-way and 4-way dimming, use Maestro companion dimmers. One dimmer can be used with up to 9 multi-location companion dimmers.
- Total multi-location wire length (blue wire) between all units must not exceed 150 ft (45 m).
- Includes a Front Accessible Service Switch (FASS) for safe bulb replacement.

Application Requirements

- ***When using LEDs or CFLs, only bulbs marked or rated as DIMMABLE can be used.***
- For a complete list of approved DIMMABLE LEDs please visit www.lutron.com/LEDfinder

Mounting

- Requires a U.S. wallbox. 3.5 in (89 mm) deep recommended, 2.25 in (57 mm) deep minimum.

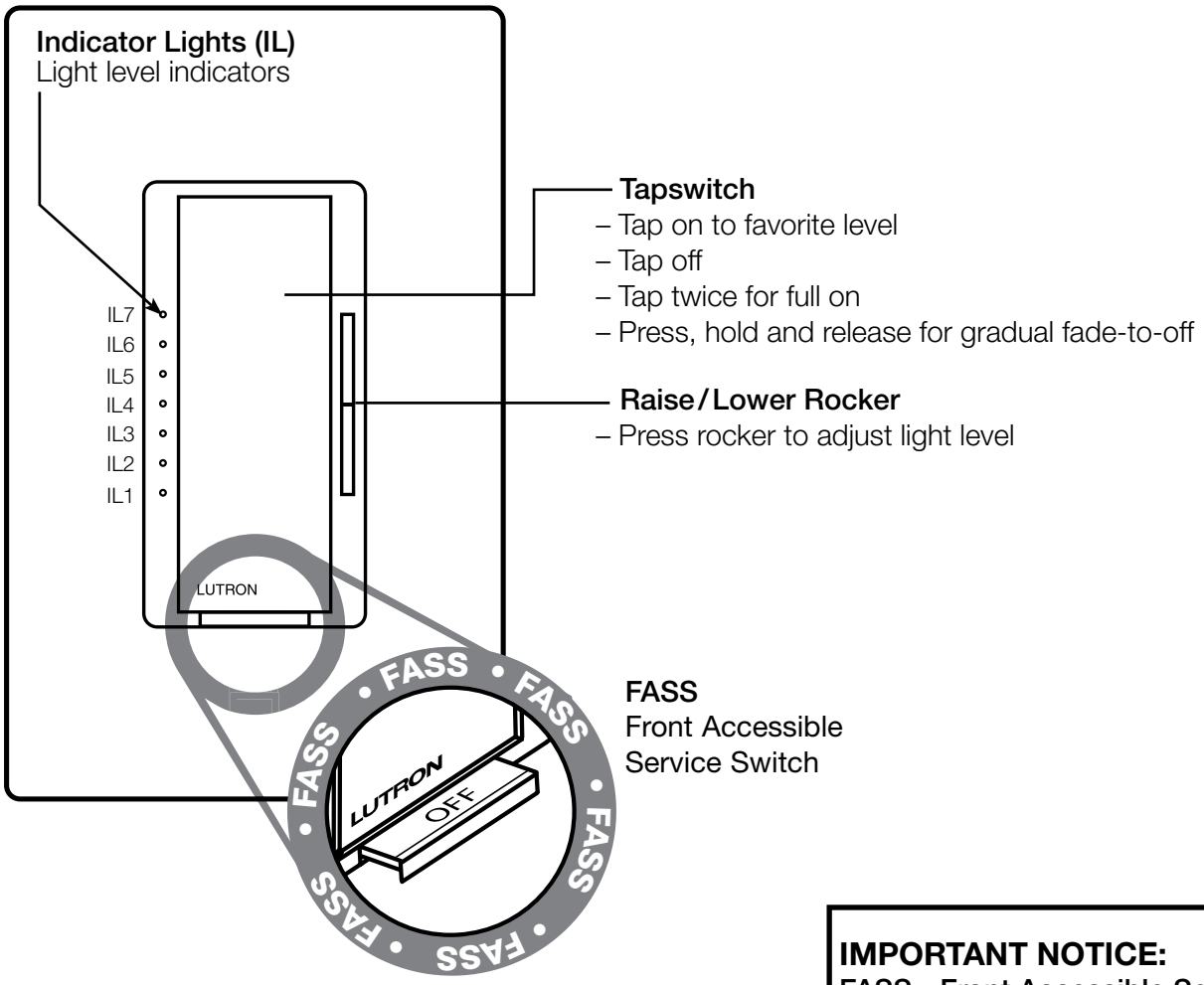
Warranty

- 1 Year Limited Warranty
  For additional Warranty information, please visit www.lutron.com/TechnicalDocumentLibrary/369-119_Wallbox_Warranty.pdf

Job Name:	Model Numbers:	
Job Number:		

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Operation



IMPORTANT NOTICE:
FASS - Front Accessible Service Switch
To replace lamp(s), remove power by pulling the FASS out fully on all main controlling devices. After replacing lamp(s), push the FASS back in fully to restore power to the control(s).

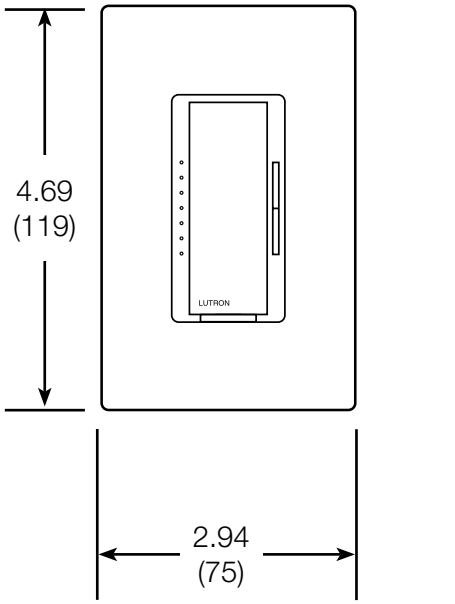
Job Name:	Model Numbers:	
Job Number:		

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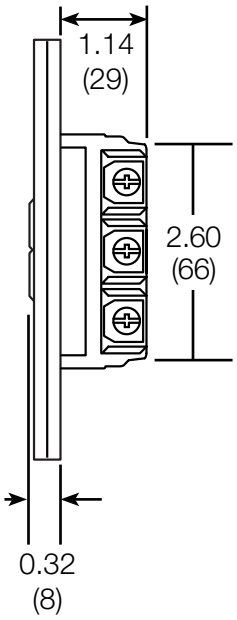
Dimensions

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

Front View
(wallplate sold separately)



Side View



Colors and Finishes

Gloss Finishes

WH	White	IV	Ivory
AL	Almond	LA	Light Almond
GR	Gray	BR	Brown
BL	Black		

Satin Colors

SW	Snow	MN	Midnight
TP	Taupe	BI	Biscuit
PD	Palladium	HT	Hot

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

Job Name:	Model Numbers:	
Job Number:		

Multigang and Mixed-Bulb-Type Ratings

Total LED/CFL Wattage Installed (Watts per bulb X # of bulbs)		Maximum Allowable Incandescent/Halogen Wattage		
		Not ganged	End of gang	Middle of gang
0 W	+	500 W	400 W	300 W
1 W – 50 W	+	400 W	300 W	200 W
51 W – 100 W	+	300 W	200 W	100 W
101 W – 150 W	+	200 W	100 W	0 W
151 W – 200 W	+	100 W	0 W	N/A
201 W – 250 W	+	0 W	N/A	N/A

Ganging and Derating

When combining controls in the same wallbox, derating is required. See **Load Type and Capacity**.
No derating is required for companion devices.

Load Type and Capacity

Model Number	Description	Voltage	Load Type	Minimum Load	Maximum Load			Neutral	Required Phase Mode
					Not Ganged	End of Gang	Middle of gang		
MA-PRO-XX[1,2]	Phase-Selectable Neutral Optional Dimmer	120 V~	LED[2]	1 bulb	250 W	200 W	150 W	Optional[8]	Either
			CFL[2,3]	1 bulb	250 W	200 W	150 W	Optional[8]	Forward
			MLV Transformer with LED	See Application Note #559 (P/N 048559) at www.lutron.com No Derating Required				Required	Forward
			ELV Transformer with LED						Reverse
			MLV Transformer with Halogen[4,5,6,]	10 W	400 VA (300 W)	No Derating Required		Required	Forward
			ELV Transformer with Halogen[4,5]	10 W	500 W	400 W	300 W	Required	Reverse
			Incandescent/ Halogen	5 W	500 W	400 W	300 W	Optional[8]	Either
			Dimmable Fluorescent Ballast [7]	1 ballast	3.3 A (400 VA)	No Derating Required		Required	Forward
			Hi-lume 1% 2-Wire (LTE) LED Drivers[3]	1 driver	3.3 A (400 W) 20 drivers max	No Derating Required		Required	Forward
			PHPM-PA/3F and GRX-TVI	1 interface	3 interfaces	No Derating Required		Required	Forward

1 Designed for use with permanently installed LED, incandescent, tungsten halogen, or magnetic low-voltage transformers with halogen based lamps.
2 See bulb list at www.lutron.com/ledfinder
3 SSL-7A-2015 compliant when in forward-phase.
4 When using magnetic (core and coil) low-voltage transformers with halogen lamps set the dimmer to forward-phase. When using with dimmable electronic (solid-state) low-voltage transformers set the dimmer to reverse-phase.
5 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.

6 Notes for dimming MLV fixtures:
- The total VA rating of the transformer(s) shall not exceed the VA rating of the dimmer. The VA rating of the transformer should be written on the nameplate label or determined by contacting the manufacturer. The maximum halogen lamp wattage is typically 70%- 85% of the transformer's VA rating.
- MLV transformer loads powered by utility power and emergency backup generators should have a minimum 1 second delay between switching power sources. Rapid non-synchronous switching can cause the transformers to draw high currents which would cause breakers to trip or the dimmers controlling them to trip a protection.

7 Includes Philips Advance Mark 10® ballasts, Sylvania®, Tu-Wire, and POWERSENSE®.
8 Neutral is recommended for best dimming performance, if available, but is not required for this load type.

Job Name:	Model Numbers:	
Job Number:		

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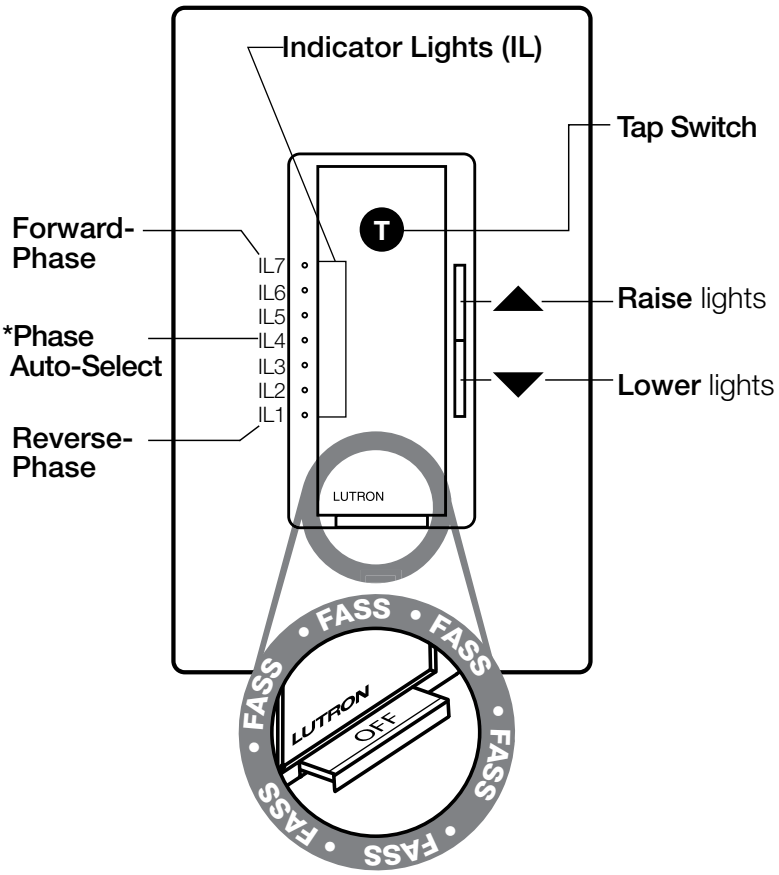
Advanced Programming Mode

Maestro dimmers and switches contain an Advanced Programming Mode (APM) that allows users to customize the control to meet their specific needs. For a detailed description of APM features and uses please refer to Lutron Application Note #703 (P/N 048703) at www.lutron.com

Available Advanced Features	
Feature	**Description**
High-end trim	Select the maximum available light limit.
Low-end trim	Select the minimum available light limit.
Enable/Disable/Dim Indicator Lights	Select the brightness of the LEDs when the dimmer is Off.
Delayed long fade-to-off	Set the length of time to wait before entering a long fade-to-off.
Fade off time	Control the rate at which the dimmer fades from full intensity to Off when the tapswitch is pressed.
Fade on time	Control the rate at which the dimmer fades from Off to preset intensity when the tapswitch is pressed.
Protected preset	Set the intensity that the dimmer will always turn on to when the tapswitch is pressed once.
Phase selectable	Select between forward-phase, reverse-phase, and phase auto-select. The default with no neutral connection is **phase auto-select**. The default with neutral connected is **reverse-phase**.
Restore default	Select to return dimmer to its original factory settings

Instructions for selecting phase:

1. Open the FASS.
2. Press and hold ▲. Close the FASS and continue to hold ▲ for 5 seconds.
   Note: The current phase selection will illuminate:
   IL7 (top, forward-phase)
   IL4 (middle, phase auto-select-default with no neutral)*
   IL1 (bottom, reverse-phase-default with neutral)
3. Press the ▲ or ▼ to get the desired selection.
4. Press T to exit Phase Selection mode.

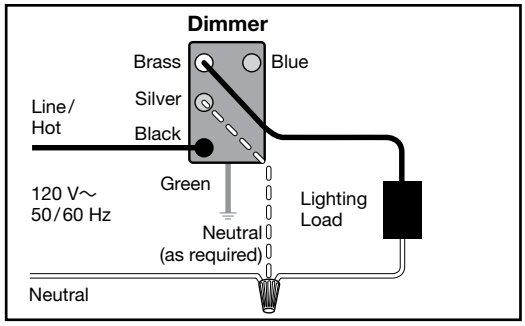


*Phase auto-select defaults to reverse-phase unless the LED load cannot operate correctly. It will then switch to forward-phase automatically. Phase auto-select is only available when no neutral wire is connected.

Job Name:	Model Numbers:	
Job Number:		

Wiring Diagrams

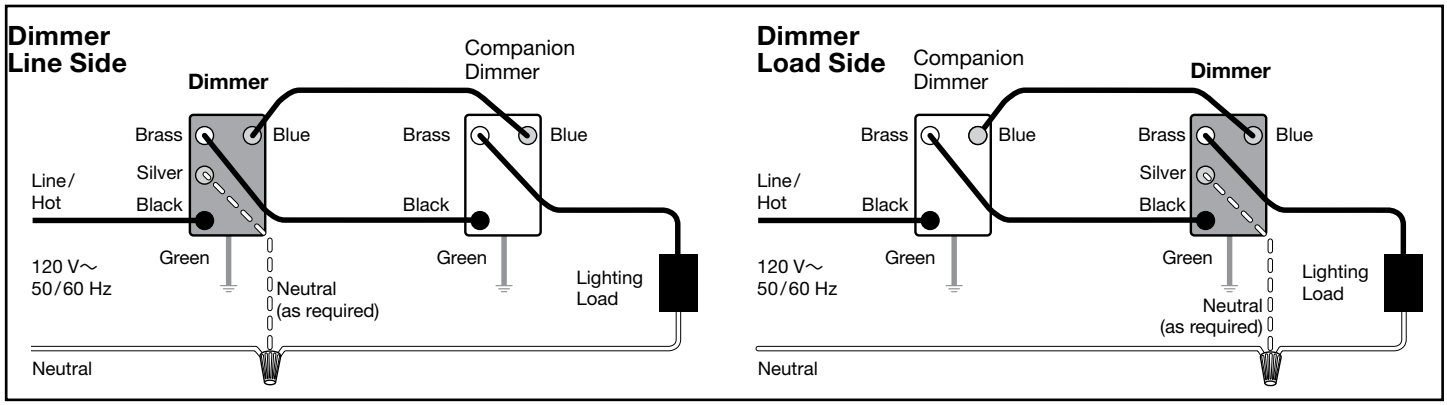
Single-Pole Wiring



Note: Dimmer can be installed on the line side or load side of the circuit.

Note: See **Load Type and Capacity** table on page 5 for neutral wire requirements.

3-Way Wiring (Using MA-R or MSC-AD Companion Dimmer)

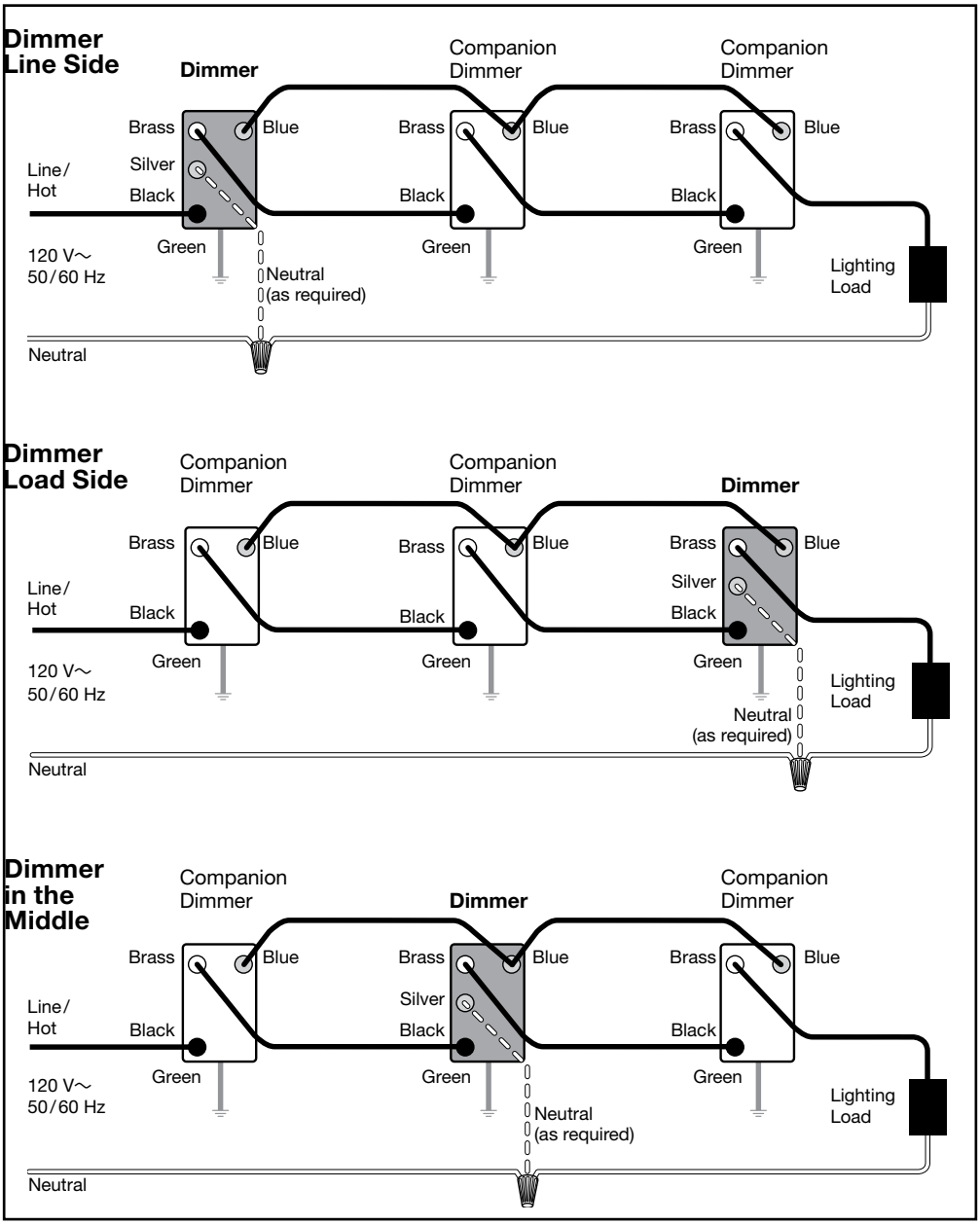


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Job Name:	Model Numbers:	
Job Number:		

Wiring Diagrams *(continued)*

4-Way Wiring (Using MA-R or MSC-AD Companion Dimmer)



Note: Dimmer can be installed on the line side, load side, or in the middle of the circuit.

Note: See **Load Type and Capacity** table on page 5 for neutral wire requirements.

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All other product names, logos, and brands are property of their respective owners.

Job Name:	Model Numbers:	
Job Number:		

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Maestro PRO LED+ Dimmer

Phase-selectable dimmer for LED, ELV, MLV and incandescent lamp loads.



Wallplate sold separately

Features

- Large tapswitch with a rocker-style dimmer for a standard designer wallplate opening.
- Advanced dimming technology designed for compatibility with a broader range of high-efficacy bulbs.
- UL Listed to control:
  - Dimmable LED with integrated driver
  - Electronic Low-Voltage (ELV)
  - Magnetic Low-Voltage (MLV)
  - Dimmable compact fluorescent lamps (CFLs) with integrated ballast
  - Incandescent and halogen
  - Philips Advance Mark 10® ballasts
  - Hi-lume 1% 2-Wire (LTE) LED driver
- Low-end adjustment to accommodate a wide range of bulbs.
- Can be used in single-pole or in multi-location (using MA-R) applications.
- Coordinating Claro and stainless steel wallplates available separately.
- 100% factory-tested.

Product Specific Features

- NEMA SSL-7A-2015 compliant (in forward-phase mode)
- Neutral optional - See **Load Type and Capacity** table on page 5
- RTISS Equipped circuitry compensates in real time for incoming line-voltage variations (neutral connection required)
- Capable of controlling up to 250 W dimmable LED or 500 W incandescent/halogen or mixed bulb type per **Multigang and Mixed Bulb Type Ratings** table (see page 5)
- Capable of controlling up to 500 W of ELV or 400 VA of MLV or up to 20 Hi-lume 1% 2-Wire (LTE) LED drivers
- UL Listed for field interchangeable plastics

Model Number

MA-PRO-XX[1]	Single-pole/3-way[2]/Multi-location

Color Change Kit Model Numbers

MK-D-XX[1, 3]	1 Piece Color Change Kit
MK-D-5-XX[1, 3]	5 Piece Color Change Kit

[1] "XX" in the model number represents color/finish code. See **Colors and Finishes** on page 4.

[2] For 3-way and 4-way dimming, Maestro companion dimmers must be used.

[3] Color change kits do not include wallplates.

Job Name:	Model Numbers:	
Job Number:		

Specifications

Regulatory Approvals

- UL Listed to U.S. and Canadian safety requirements (UL 1472/CSA C22.2 184.1)
- NOM
- NEMA SSL-7A-2015 forward phase compliant

Power and Ratings

- 120 V~ 50/60 Hz
- Maximum Load
  – 250 W Dimmable LED
  or
  – 500 W incandescent/halogen/ELV
  or
  – 400 VA MLV
  or
  – 20 Lutron Hi-lume 1% 2-Wire (LTE) LED drivers
  or
  – Mixed bulb type per **Multigang and Mixed Bulb Type Ratings** table (see page 5)
- Minimum Load
  – See approved lamp list for LED at www.lutron.com/LEDfinder

Environment

- For indoor use only
- Operating temperatures 32 °F (0 °C) to 104 °F (40 °C)
- Relative humidity: 0% to 90% non-condensing

Performance

- Power failure memory: Should power be interrupted, the control will return to its previous state when power is restored.
- 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.
- Tested to withstand electrostatic discharge without damage or memory loss.
- For 3-way and 4-way dimming, use Maestro companion dimmers. One dimmer can be used with up to 9 multi-location companion dimmers.
- Total multi-location wire length (blue wire) between all units must not exceed 150 ft (45 m).
- Includes a Front Accessible Service Switch (FASS) for safe bulb replacement.

Application Requirements

- ***When using LEDs or CFLs, only bulbs marked or rated as DIMMABLE can be used.***
- For a complete list of approved DIMMABLE LEDs please visit www.lutron.com/LEDfinder

Mounting

- Requires a U.S. wallbox. 3.5 in (89 mm) deep recommended, 2.25 in (57 mm) deep minimum.

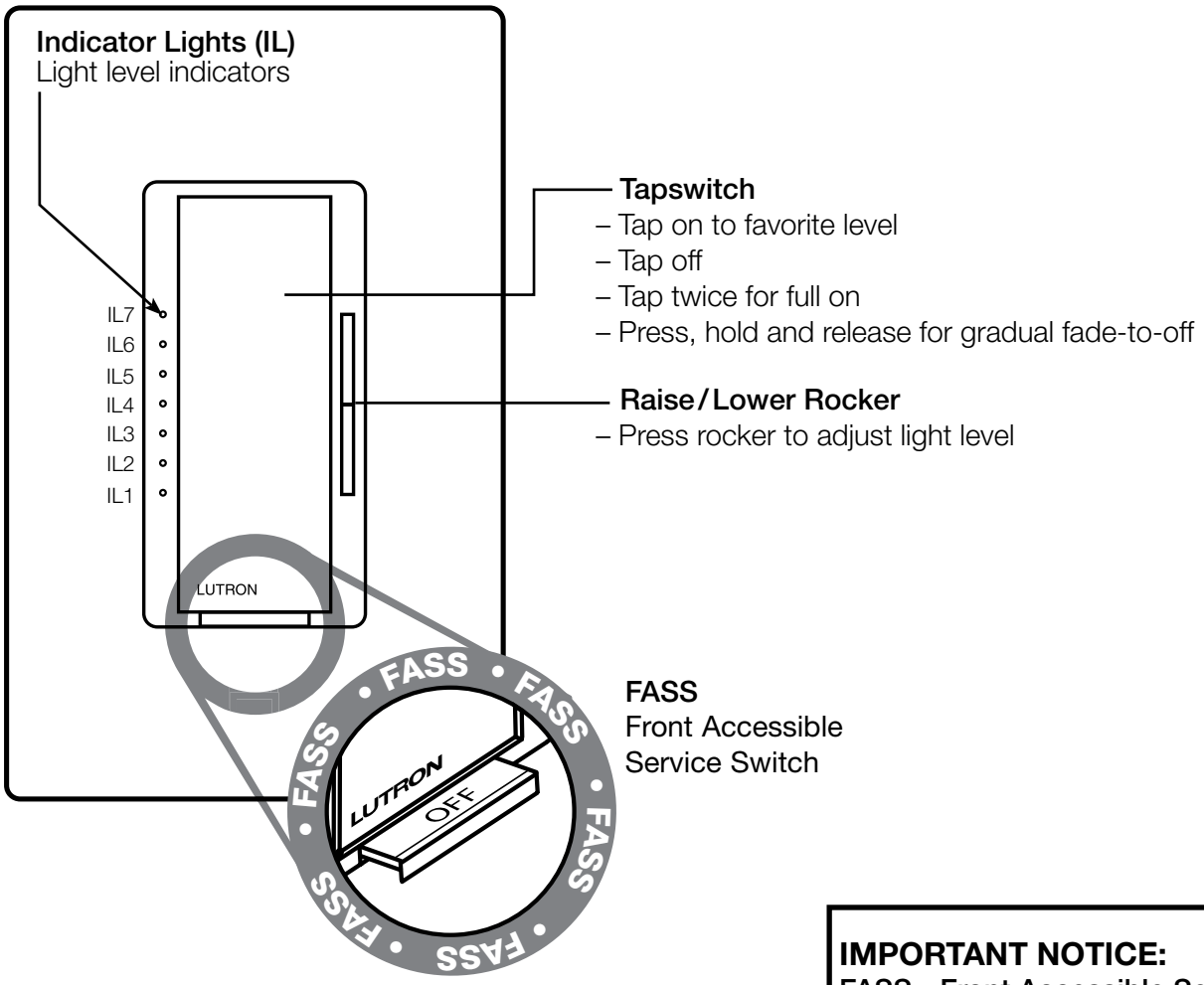
Warranty

- 1 Year Limited Warranty
  For additional Warranty information, please visit www.lutron.com/TechnicalDocumentLibrary/369-119_Wallbox_Warranty.pdf

Job Name:	Model Numbers:	
Job Number:		

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Operation



IMPORTANT NOTICE:
FASS - Front Accessible Service Switch
To replace lamp(s), remove power by pulling the FASS out fully on all main controlling devices. After replacing lamp(s), push the FASS back in fully to restore power to the control(s).

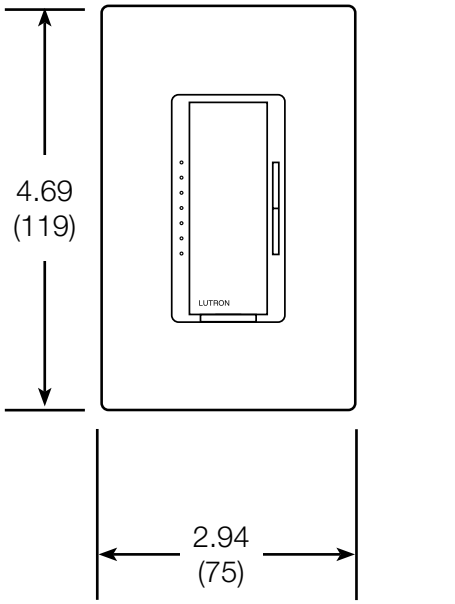
Job Name:	Model Numbers:	
Job Number:		

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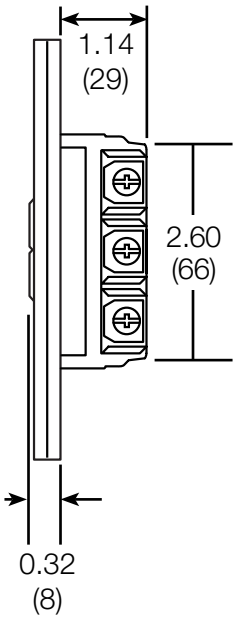
Dimensions

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

Front View
(wallplate sold separately)



Side View



Colors and Finishes

Gloss Finishes

WH	White	IV	Ivory
AL	Almond	LA	Light Almond
GR	Gray	BR	Brown
BL	Black		

Satin Colors

SW	Snow	MN	Midnight
TP	Taupe	BI	Biscuit
PD	Palladium	HT	Hot

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

Job Name:	Model Numbers:	
Job Number:		

Multigang and Mixed-Bulb-Type Ratings

Total LED/CFL Wattage Installed (Watts per bulb X # of bulbs)		Maximum Allowable Incandescent/Halogen Wattage		
		Not ganged	End of gang	Middle of gang
0 W	+	500 W	400 W	300 W
1 W – 50 W	+	400 W	300 W	200 W
51 W – 100 W	+	300 W	200 W	100 W
101 W – 150 W	+	200 W	100 W	0 W
151 W – 200 W	+	100 W	0 W	N/A
201 W – 250 W	+	0 W	N/A	N/A

Ganging and Derating

When combining controls in the same wallbox, derating is required. See **Load Type and Capacity**.
No derating is required for companion devices.

Load Type and Capacity

Model Number	Description	Voltage	Load Type	Minimum Load	Maximum Load			Neutral	Required Phase Mode
					Not Ganged	End of Gang	Middle of gang		
MA-PRO-XX[1,2]	Phase-Selectable Neutral Optional Dimmer	120 V~	LED[2]	1 bulb	250 W	200 W	150 W	Optional[8]	Either
			CFL[2,3]	1 bulb	250 W	200 W	150 W	Optional[8]	Forward
			MLV Transformer with LED	See Application Note #559 (P/N 048559) at www.lutron.com No Derating Required				Required	Forward
			ELV Transformer with LED						Reverse
			MLV Transformer with Halogen[4,5,6,]	10 W	400 VA (300 W)	No Derating Required		Required	Forward
			ELV Transformer with Halogen[4,5]	10 W	500 W	400 W	300 W	Required	Reverse
			Incandescent/ Halogen	5 W	500 W	400 W	300 W	Optional[8]	Either
			Dimmable Fluorescent Ballast [7]	1 ballast	3.3 A (400 VA)	No Derating Required		Required	Forward
			Hi-lume 1% 2-Wire (LTE) LED Drivers[3]	1 driver	3.3 A (400 W) 20 drivers max	No Derating Required		Required	Forward
			PHPM-PA/3F and GRX-TVI	1 interface	3 interfaces	No Derating Required		Required	Forward

1 Designed for use with permanently installed LED, incandescent, tungsten halogen, or magnetic low-voltage transformers with halogen based lamps.
2 See bulb list at www.lutron.com/ledfinder
3 SSL-7A-2015 compliant when in forward-phase.
4 When using magnetic (core and coil) low-voltage transformers with halogen lamps set the dimmer to forward-phase. When using with dimmable electronic (solid-state) low-voltage transformers set the dimmer to reverse-phase.
5 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.

6 Notes for dimming MLV fixtures:
- The total VA rating of the transformer(s) shall not exceed the VA rating of the dimmer. The VA rating of the transformer should be written on the nameplate label or determined by contacting the manufacturer. The maximum halogen lamp wattage is typically 70%- 85% of the transformer's VA rating.
- MLV transformer loads powered by utility power and emergency backup generators should have a minimum 1 second delay between switching power sources. Rapid non-synchronous switching can cause the transformers to draw high currents which would cause breakers to trip or the dimmers controlling them to trip a protection.

7 Includes Philips Advance Mark 10® ballasts, Sylvania®, Tu-Wire, and POWERSENSE®.
8 Neutral is recommended for best dimming performance, if available, but is not required for this load type.

Job Name:	Model Numbers:	
Job Number:		

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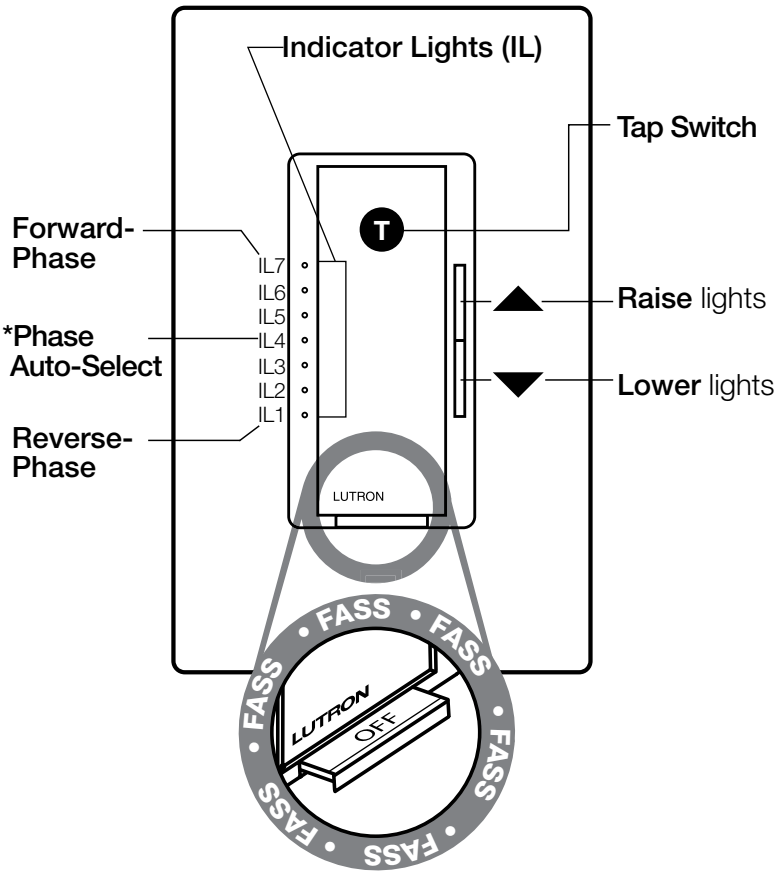
Advanced Programming Mode

Maestro dimmers and switches contain an Advanced Programming Mode (APM) that allows users to customize the control to meet their specific needs. For a detailed description of APM features and uses please refer to Lutron Application Note #703 (P/N 048703) at www.lutron.com

Available Advanced Features	
Feature	**Description**
High-end trim	Select the maximum available light limit.
Low-end trim	Select the minimum available light limit.
Enable/Disable/Dim Indicator Lights	Select the brightness of the LEDs when the dimmer is Off.
Delayed long fade-to-off	Set the length of time to wait before entering a long fade-to-off.
Fade off time	Control the rate at which the dimmer fades from full intensity to Off when the tapswitch is pressed.
Fade on time	Control the rate at which the dimmer fades from Off to preset intensity when the tapswitch is pressed.
Protected preset	Set the intensity that the dimmer will always turn on to when the tapswitch is pressed once.
Phase selectable	Select between forward-phase, reverse-phase, and phase auto-select. The default with no neutral connection is **phase auto-select**. The default with neutral connected is **reverse-phase**.
Restore default	Select to return dimmer to its original factory settings

Instructions for selecting phase:

1. Open the FASS.
2. Press and hold ▲. Close the FASS and continue to hold ▲ for 5 seconds.
   Note: The current phase selection will illuminate:
   IL7 (top, forward-phase)
   IL4 (middle, phase auto-select-default with no neutral)*
   IL1 (bottom, reverse-phase-default with neutral)
3. Press the ▲ or ▼ to get the desired selection.
4. Press T to exit Phase Selection mode.

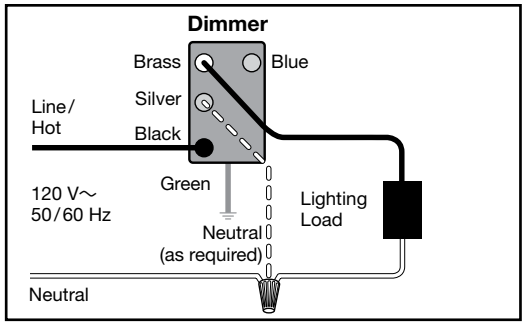


*Phase auto-select defaults to reverse-phase unless the LED load cannot operate correctly. It will then switch to forward-phase automatically. Phase auto-select is only available when no neutral wire is connected.

Job Name:	Model Numbers:	
Job Number:		

Wiring Diagrams

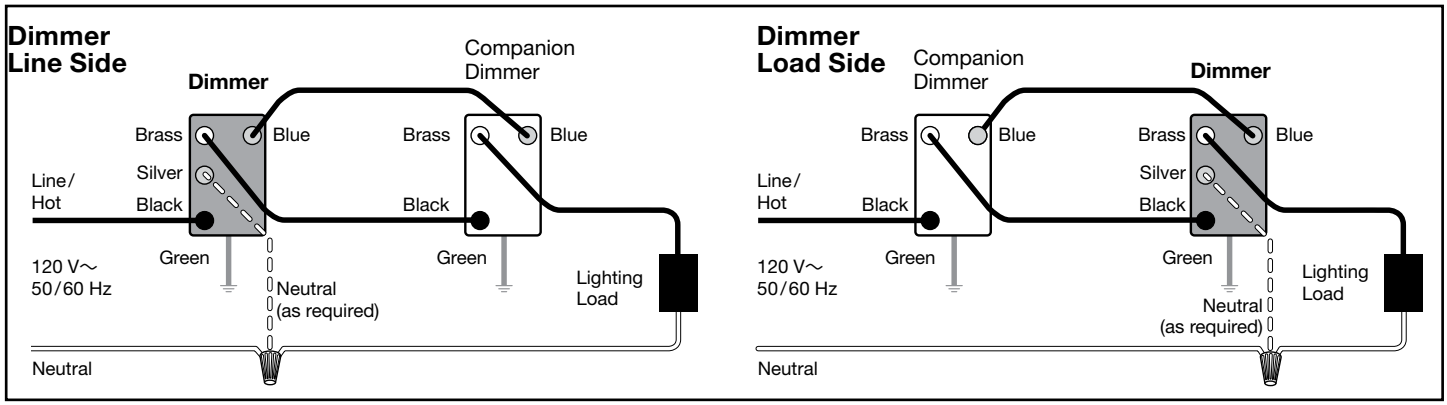
Single-Pole Wiring



Note: Dimmer can be installed on the line side or load side of the circuit.

Note: See **Load Type and Capacity** table on page 5 for neutral wire requirements.

3-Way Wiring (Using MA-R or MSC-AD Companion Dimmer)

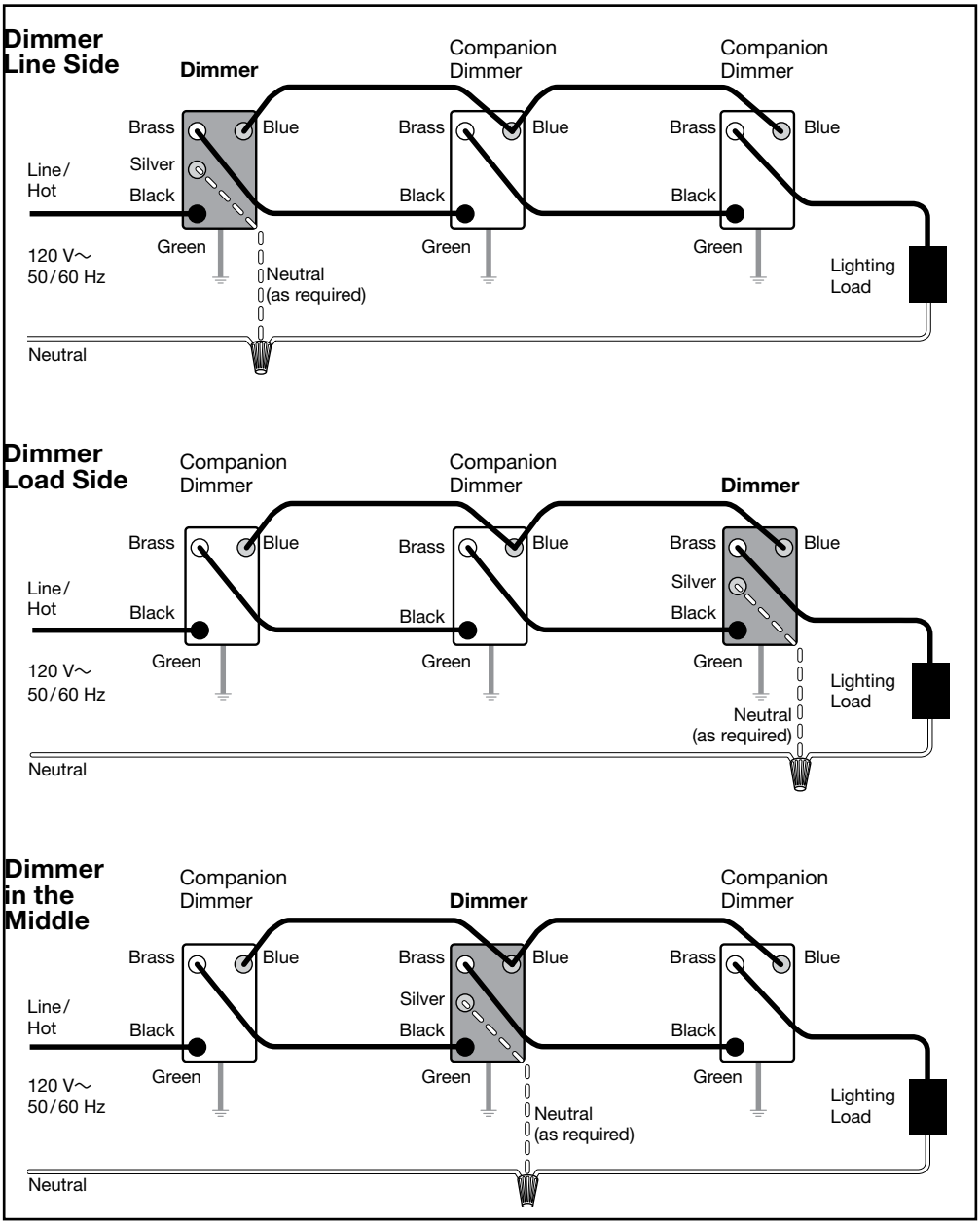


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Job Name:	Model Numbers:	
Job Number:		

Wiring Diagrams *(continued)*

4-Way Wiring (Using MA-R or MSC-AD Companion Dimmer)



Note: Dimmer can be installed on the line side, load side, or in the middle of the circuit.

Note: See **Load Type and Capacity** table on page 5 for neutral wire requirements.

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Job Name:	Model Numbers:	
Job Number:		