Maestro® Occupancy sensing switch

To power the sensing circuit, occupancy sensing switches require a small flow of current when the load is in the OFF state. This can be accomplished by connecting the power supply return wire to ground or to neutral.

Local codes in certain municipalities require that a neutral conductor be run to the switch box, regardless of construction. In one particular instance, installing occupancy sensors that use the ground wire to function is not permitted.

The MS-OPS6M2U-DV and MS-VPS6M2U products allow the installer to configure the device to connect to either ground or neutral.

- To connect to ground, simply install the product in its "out-of-the box" condition.
- To connect to neutral, install the supplied white sleeve over the green wire.

  For more information about occupancy sensing switches and the National Electrical code, see:

 *www.lutron.com/TechnicalDocumentLibrary/048469.pdf*

MS-OPS6M2U-DV
MS-VPS6M2U-DV

Features

- Passive infrared sensors with exclusive Lutron® XCT™ Technology for fine motion detection
- 180° sensor field-of-view
- Up to 30 ft x 30 ft (9 m x 9 m) [900 ft^2 (81 m^2)] major motion coverage and 20 ft x 20 ft (6 m x 6 m) [400 ft^2 (36 m^2)] minor motion coverage
- Occupancy version can be set to Auto-ON/Auto-OFF or Manual-ON/Auto-OFF
- Vacancy version available to meet CA Title 24 requirements
- Adjustable timeout (1, 5, 15, or 30 minutes) and high/low sensitivity adjustment
- Occupancy sensing switch loads: incandescent, halogen, ELV, MLV, CFL, LED, magnetic fluorescent, electronic fluorescent, and fan.

Models available

MS-OPS6M2U-DV
MS-VPS6M2U-DV
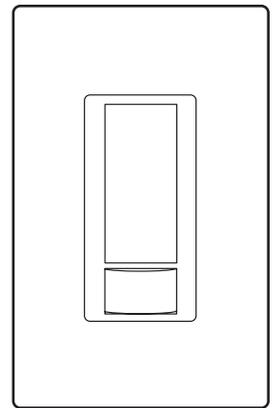
Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals

- UL® Listed to U.S. and Canadian safety requirements.
- NOM Certification (pending).

Power

- 120–277 V∼ 50/60 Hz[1]

Key Design Features

- All lighting loads.
- Crush/tamper resistant lens.
- Smart ambient light detection.
- Adaptive switching algorithm for extended relay life.
- XCT™ Technology for fine motion detection.

Environment

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

Warranty

- 5-Year Limited Warranty. For additional Warranty information, please visit *www.lutron.com/ TechnicalDocumentLibrary/Sensor_Warranty.pdf*

Additional Information

- For Maestro® Occupancy sensing dimmer models, please see *Lutron® P/N 369270*.
- For other Maestro® Occupancy sensing switch models, please see *Lutron® P/N 369666*.
- For use with MA-AS, MSC-AS, MA-AS-277, or MSC-AS-277 to control the load from more than two locations, please see *Lutron® P/N 048435*.
- For more information, please see *www.lutron.com/ occvacsensors*
- Lutron Technical Hotline: 1.800.523.9466.

Advanced Features

Switching

Adaptive zero cross feature maximizes relay life by switching at the point of minimum energy on the AC power curve. Actively adapts to variations in relay timing.

XCT™ Technology

Advanced sensing technology for fine motion detection ensures that the lights stay on while the room is occupied, and that the sensor does not turn on falsely when there is no occupancy in the room. For more information, see *www.lutron.com/ TechnicalDocumentLibrary/white%20paper%20 XCT%204-23-09%20B.pdf*

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[1] Maximum current ratings for individual models are provided in the **Selection Matrix** on page 4.

Job Name:	Model Numbers:
Job Number:	

Custom Settings

Ambient Light Detection

- Lights turn on only if natural light in room is low.
- Smart—Ambient light threshold adjusts precisely to the user's preference.

  Instructions: If switch turns on when there is enough natural light, or if switch does not turn on when there is not enough natural light, press the large button within 5 seconds of entering the room. Over time, this interaction will "teach" the switch your preferred setting.

Sensor Operation

- Occupancy/Vacancy: Auto-ON/Auto-OFF or Manual-ON/Auto-OFF
- Vacancy only: Manual-ON/Auto-OFF only

Timeout Options

(See **Additional Features** on page 4 for default settings)

- 1 Minute
- 5 Minutes
- 15 Minutes
- 30 Minutes

Sensitivity Options

- High sensitivity (default)
- Low sensitivity

Auto-ON Options

(MS-OPS only)

- Occupancy (default): Auto-ON/Auto-OFF
- Vacancy*: Manual-ON/Auto-OFF
- Low Light: Lights turn on only if needed (if ambient light is below threshold)

  * There is a 15-second grace period that begins when the lights are automatically turned off, during which the lights will automatically turn back on in response to motion. This grace period is provided as a safety and convenience feature in the event that the lights turn off while the room is still occupied, so that the user does not need to manually turn the lights back on. After 15 seconds, the grace period expires and the lights must be manually turned on.

Manual Off-While-Occupied Options

(MS-OPS only — see **Additional Features** on page 4 for default setting)

- Enabled
  - When the Occupancy sensing switch is manually turned off, the Occupancy sensing switch will not turn the lights back on automatically while the room is occupied.
  - Once the room is vacated, the Auto-ON feature returns to normal operation after the timeout period has expired.
  - This may be the preference in conference rooms or classrooms while viewing presentations. This feature requires motion to keep the lights off.
- Disabled
  - When the Occupancy sensing switch is manually turned off, the Auto-ON feature will return to normal operation after 25 seconds.
  - This may be the preference if the user always wants the lights to turn on upon entering and the lights to turn off when the room is vacant.

Job Name:	Model Numbers:
Job Number:	

Selection Matrix

	Vacancy only[2] (Title 24 compliant)									Single-pole / 3-way capability
		Single-pole only								
			Works with standard mechanical 3-way switch[3]							
			Works with companion switch[3, 4]							
				All lighting loads (120 V~ only)						Max current rating
					All lighting loads (120–277 V~ only)					
						Fan (120 V~)				
							Light + Fan (120 V~)			
								Neutral or ground wire required for functionality[5]		Off-state power
									Minimum load required	
Model Number[1]										
MS-OPS6M2U-DV-XX		✔	✔		6 A	3 A	3 A	✔		
MS-VPS6M2U-DV-XX	✔	✔	✔		6 A	3 A	3 A	✔		

[1] XX in model number represents color/finish code.

[2] Occupancy sensors can be configured as Auto-ON/Auto-OFF or Manual-ON/Auto-OFF.
Vacancy sensors are configured as Manual-ON/Auto-OFF only.

[3] Standard mechanical 3-way switch cannot be combined with companion switch.

[4] Companion switch MA-AS, MSC-AS, MA-AS-277, or MSC-AS-277 is required for multi-location installations (more than two locations controlling the same lighting circuit). Up to nine companion switches may be connected.

[5] The green wire can be connected to ground or, when covered by the white sleeve, can be connected to neutral (see illustrations on page 7).

Additional Features

	Crush/tamper-resistant lens				
		Ambient light detection			
			Switching		
				XCT™ technology	
				Manual off-while-occupied default setting	
					Default timeout (minutes)
Model Number[1]					
MS-OPS6M2U-DV-XX	✔	Smart	Adaptive	✔	Enabled	15
MS-VPS6M2U-DV-XX	✔	Smart	Adaptive	✔		15

[1] XX in model number represents color/finish code.

Job Name:	Model Numbers:
Job Number:	

Occupancy Sensing Switch Placement and Operation

- The ability of the Occupancy sensing switch to detect motion requires line-of-sight of room occupants. The Occupancy sensing switch must have an unobstructed view of the room.
- Hot objects and moving air currents can affect the performance of the Occupancy sensing switch.
- The performance of the Occupancy sensing switch depends on a temperature differential between the ambient room temperature and that of room occupants. Warmer rooms may reduce the ability of the Occupancy sensing switch to detect occupants.

Definitions

Major motion: movement of a person entering or passing through an area.

Minor motion: movement of a person occupying an area and engaging in small activities (e.g., reaching for a telephone, turning the pages of a book, opening a file folder, picking up a coffee cup).

NEMA WD7 Coverage

Major motion coverage: 900 ft^2 (81 m^2)

Minor motion coverage: 400 ft^2 (36 m^2)
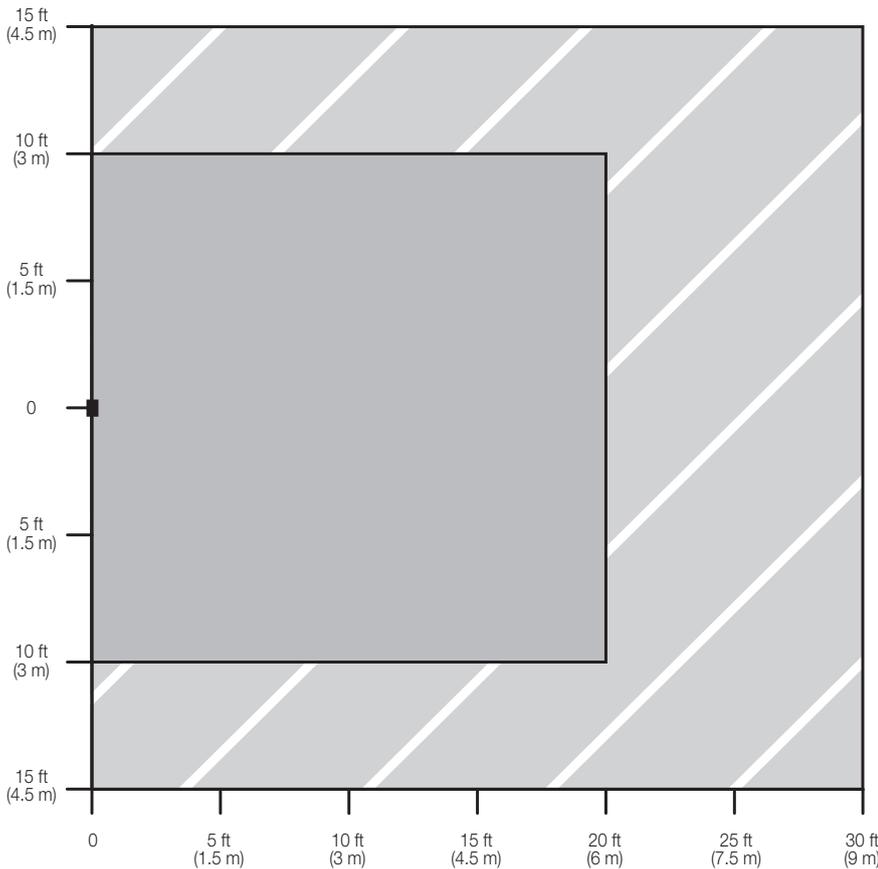
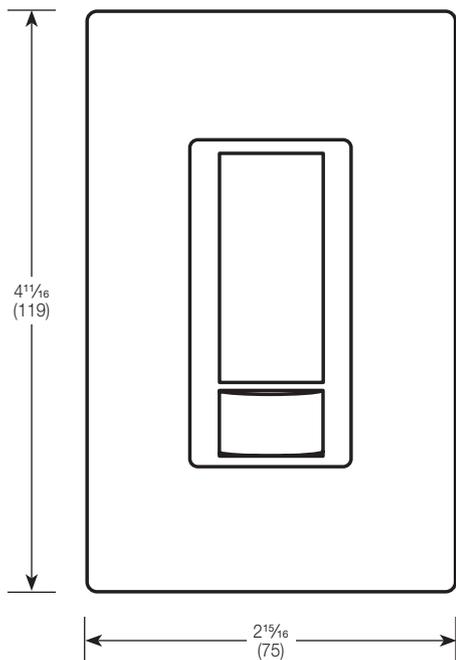### Horizontal Beam Diagram
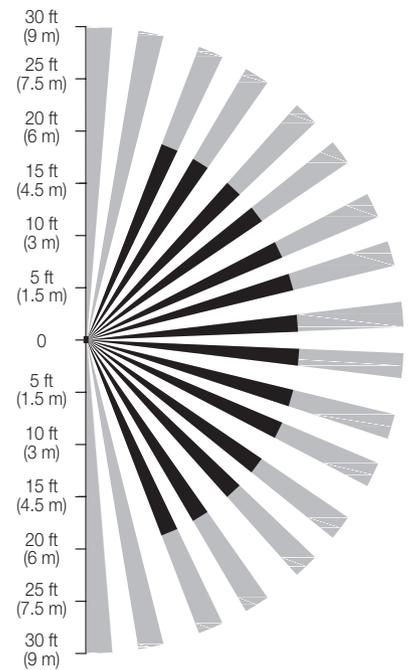
Vertical Beam Diagram
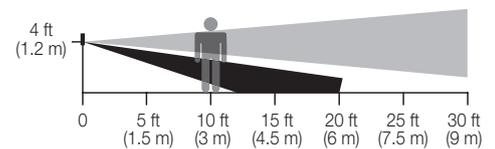
Dimensions

Measurements shown as: in (mm).

Front View

4¹¹⁄₁₆
(119)

2¹⁵⁄₁₆
(75)

Side View

1⅛
(30)

5/16 (8)

1/8 (3)

Mounting

Mounting screws

Adapter mounting screws

Wallbox

Occupancy Sensing Switch

Wallplate Adapter/Wallplate
(sold separately)

Operation

Tapswitch
Tap on/off

Sensor Lens

Sensor LED (behind lens)
Pulses during configuration
of custom settings and in
the Test mode.

MS-OPS6M2U-DV
MS-VPS6M2U-DV
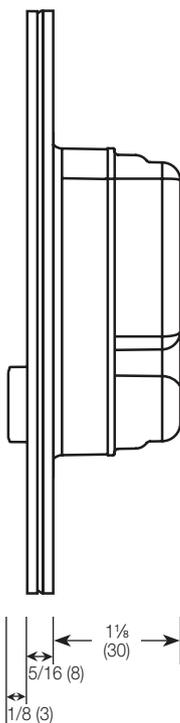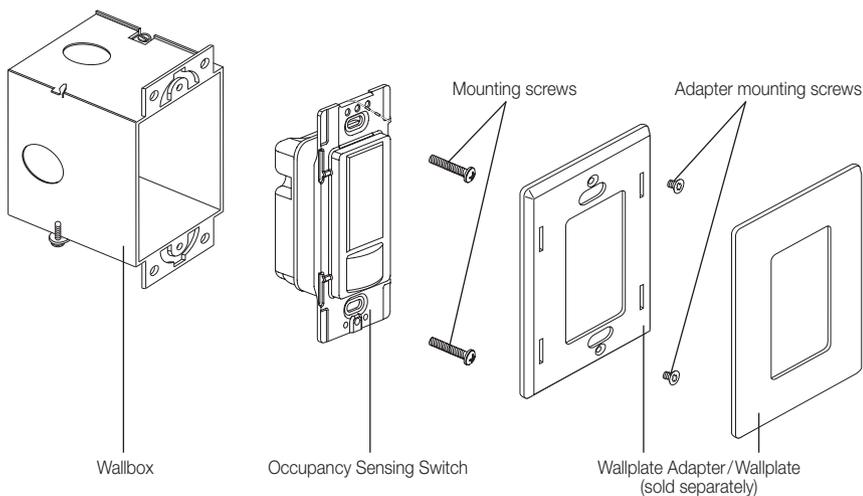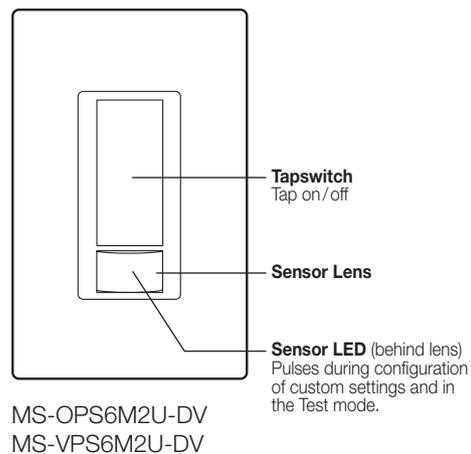
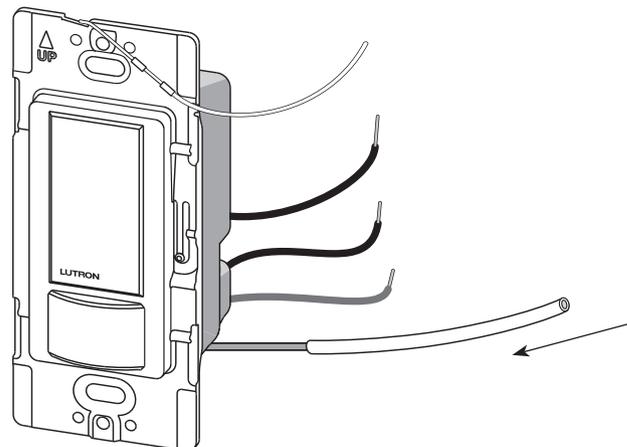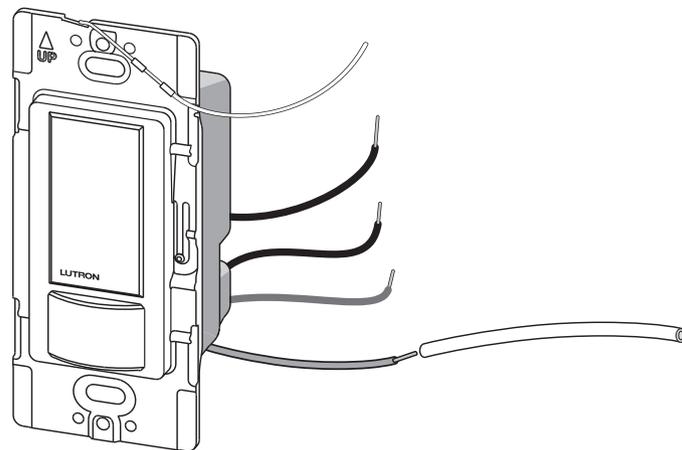| Job Name:	Model Numbers:
Job Number:	

Converting Ground Wire to Neutral Wire

The green wire can be connected to ground or, when covered by the white sleeve, can be connected to neutral.

Bare: always connect to ground

Black (hot/switched hot)

Blue (3-way)

Green (connects to Ground)
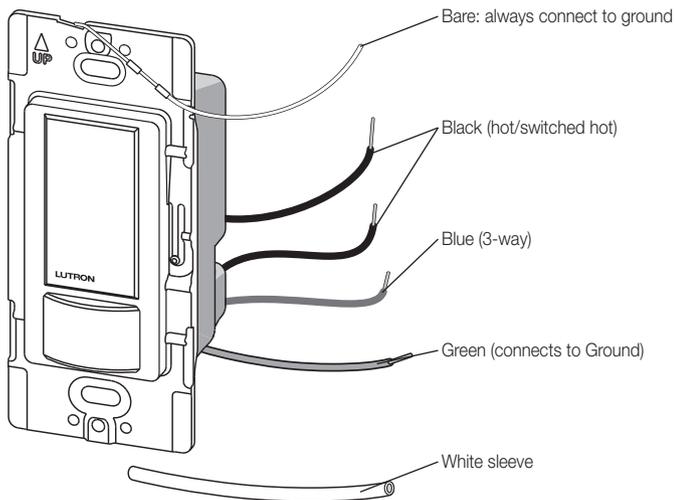
White sleeve

Slide white sleeve over green wire until flush with back cover.
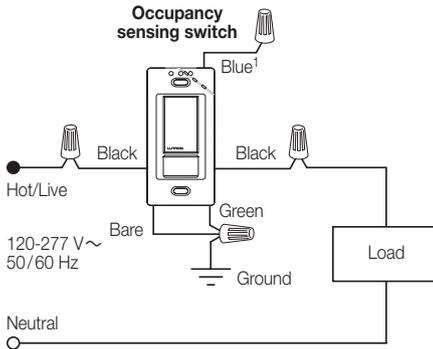
White (connects to Neutral)
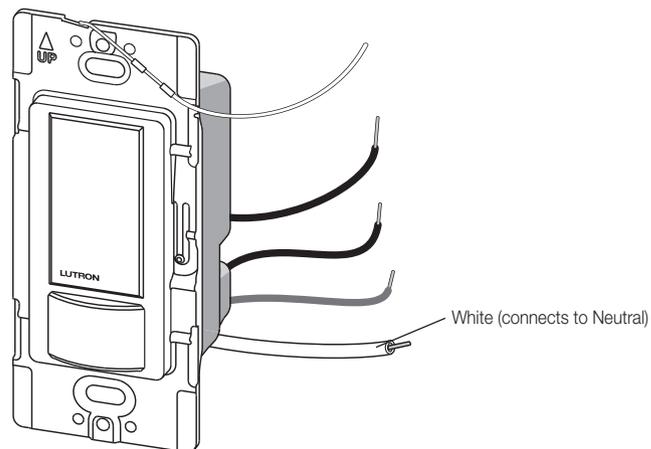
Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams: Single-Location Installations

Wiring Diagram 1: Connect occupancy sensing switch to ground
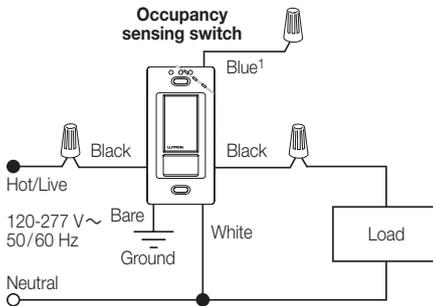Single-Location Installation (120-277 V∼)[1, 2]
-OPS6M2U-DV[3], -VPS6M2U-DV[3]

Wiring Diagram 2: Connect occupancy sensing switch to neutral
Single-Location Installation (120-277 V∼)[1, 2]
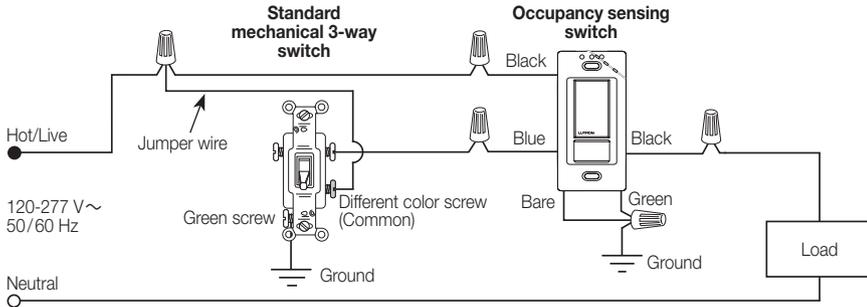-OPS6M2U-DV[4], -VPS6M2U-DV[4]

[1]   When using controls in single location installations, tighten the blue terminal or cap blue wire. Do NOT connect the blue terminal/wire to any other wire or to ground.
[2]   Fan load applies to 120 V∼ only (not for use with 277 V∼).
[3]   Green wire is connected to ground.
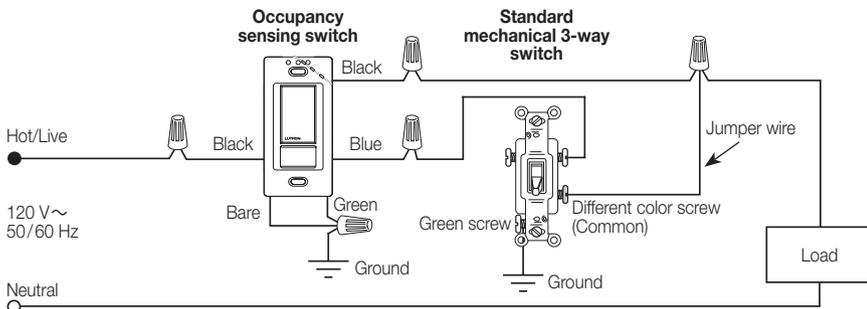[4]   Wire covered by white sleeve is connected to neutral.

Continued on next page...

Job Name:	Model Numbers:
Job Number:	

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Wiring Diagrams: 3-way Installations with Standard Mechanical 3-way Switch

Wiring Diagram 3: Connect occupancy sensing switch to ground
3-way Installation with Standard Mechanical 3-way Switch (120-277 V~)[1, 2, 3]
-OPS6M2U-DV[4], -VPS6M2U-DV[4]

Standard mechanical 3-way switch

Occupancy sensing switch

Black

Hot/Live

Jumper wire

Blue　　Black

120-277 V~
50/60 Hz

Green screw　Different color screw (Common)

Bare　Green

Ground

Ground

Load

Neutral

OR

Occupancy sensing switch

Standard mechanical 3-way switch

Black

Hot/Live　Black　Blue

Jumper wire

120 V~
50/60 Hz

Bare　Green

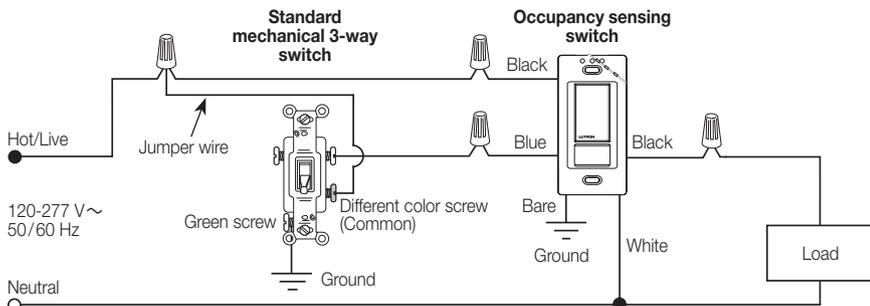Green screw　Different color screw (Common)

Ground

Ground

Load

Neutral

[1]　Only one Occupancy sensing switch can be used per multi-location circuit.
[2]　A single standard mechanical 3-way switch or up to 9 companion switches may be connected to most Occupancy sensing switches. Standard mechanical 3-way switch cannot be combined with companion switch. Total blue terminal wire length may be up to 150 ft (46 m).
[3]　Fan load applies to 120 V~ only (not for use with 277 V~).
[4]　Green wire is connected to ground.
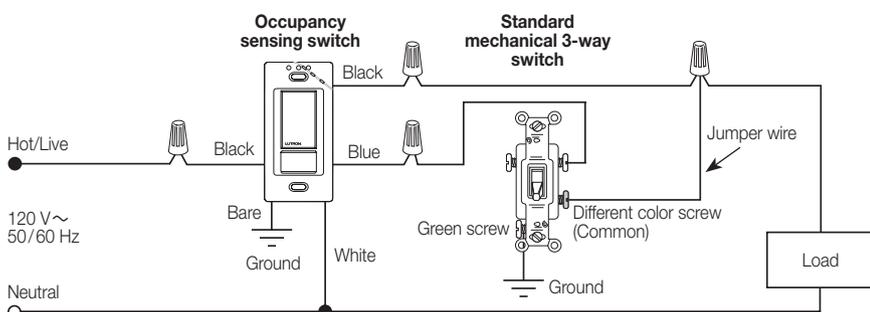
Continued on next page...

❖LUTRON® SPECIFICATION SUBMITTAL　　　　　Page

Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams: 3-way Installations with Standard Mechanical 3-way Switch *(continued)*

Wiring Diagram 4: Connect occupancy sensing switch to neutral

3-way Installation with Standard Mechanical 3-way Switch (120-277 V∼)[1, 2, 3]

-OPS6M2U-DV[4], -VPS6M2U-DV[4]

OR

[1]   Only one Occupancy sensing switch can be used per multi-location circuit.

[2]   A single standard mechanical 3-way switch or up to 9 companion switches may be connected to most Occupancy sensing switches. Standard mechanical 3-way switch cannot be combined with companion switch. Total blue terminal wire length may be up to 150 ft (46 m).

[3]   Fan load applies to 120 V∼ only (not for use with 277 V∼).

[4]   Wire covered by white sleeve is connected to neutral.
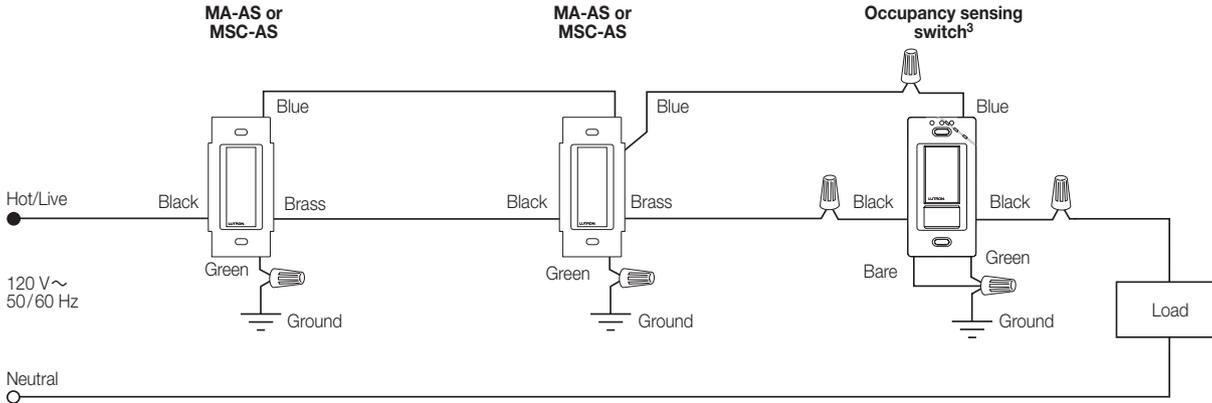
Continued on next page...

Wiring Diagrams: Multi-location Installations

Wiring Diagram 5: Connect occupancy sensing switch to ground
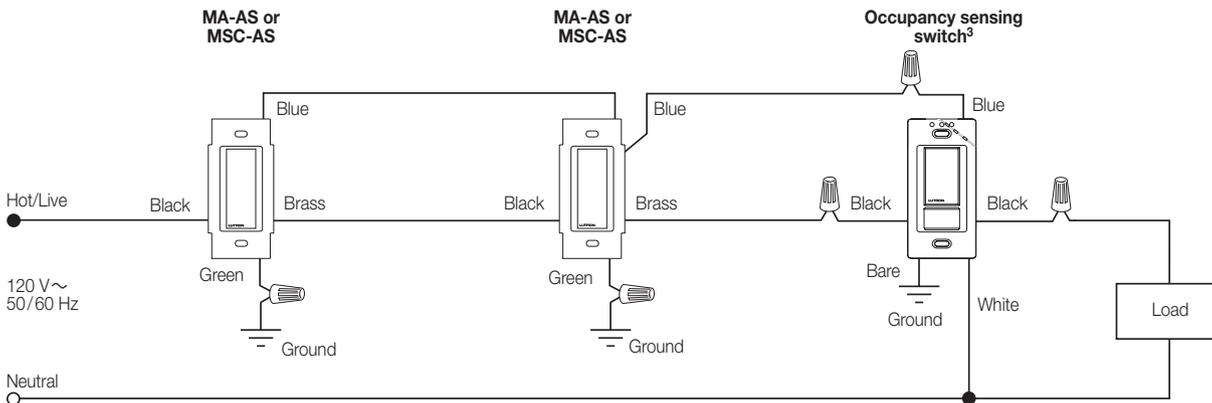Multi-Location Installation (120 V∼)[1, 2, 3]
-OPS6M2U-DV[4], -VPS6M2U-DV[4]

MA-AS or MSC-AS   MA-AS or MSC-AS   Occupancy sensing switch[3]

Blue   Blue   Blue

Hot/Live   Black   Brass   Black   Brass   Black   Black

120 V∼ 50/60 Hz   Green   Green   Bare   Green

Ground   Ground   Ground   Load

Neutral

Wiring Diagram 6: Connect occupancy sensing switch to neutral
Multi-Location Installation (120 V∼)[1, 2, 3]
-OPS6M2U-DV[5], -VPS6M2U-DV[5] with MA-AS or MSC-AS

MA-AS or MSC-AS   MA-AS or MSC-AS   Occupancy sensing switch[3]

Blue   Blue   Blue

Hot/Live   Black   Brass   Black   Brass   Black   Black

120 V∼ 50/60 Hz   Green   Green   Bare   White

Ground   Ground   Ground   Load

Neutral

[1]   Only one Occupancy sensing switch can be used per multi-location circuit.
[2]   A single standard mechanical 3-way switch or up to 9 companion switches may be connected to most Occupancy sensing switches. Standard mechanical 3-way switch cannot be combined with companion switch. Total blue terminal wire length may be up to 150 ft (46 m).
[3]   Occupancy sensing switch can be installed in any location.
[4]   Green wire is connected to ground.
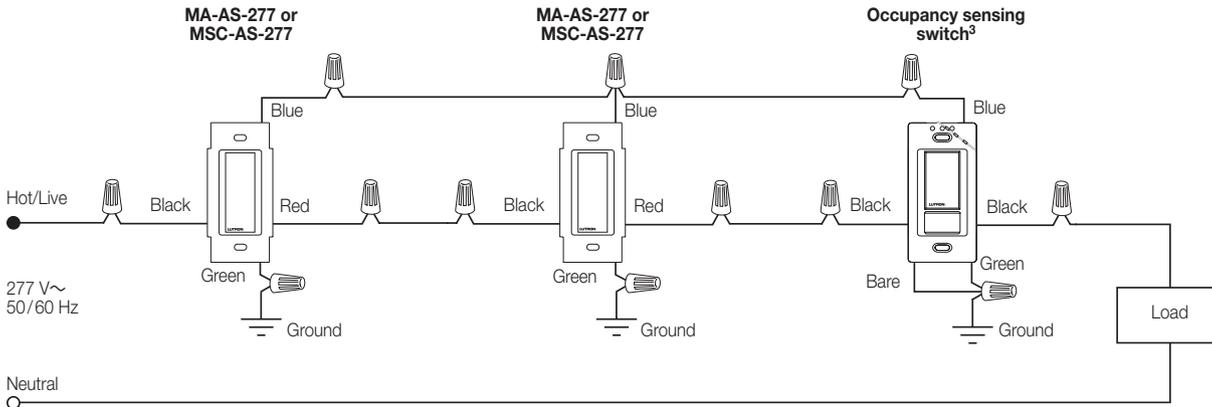[5]   Wire covered by white sleeve is connected to neutral.

Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams: Multi-location Installations *(continued)*

Wiring Diagram 7: Connect occupancy sensing switch to ground
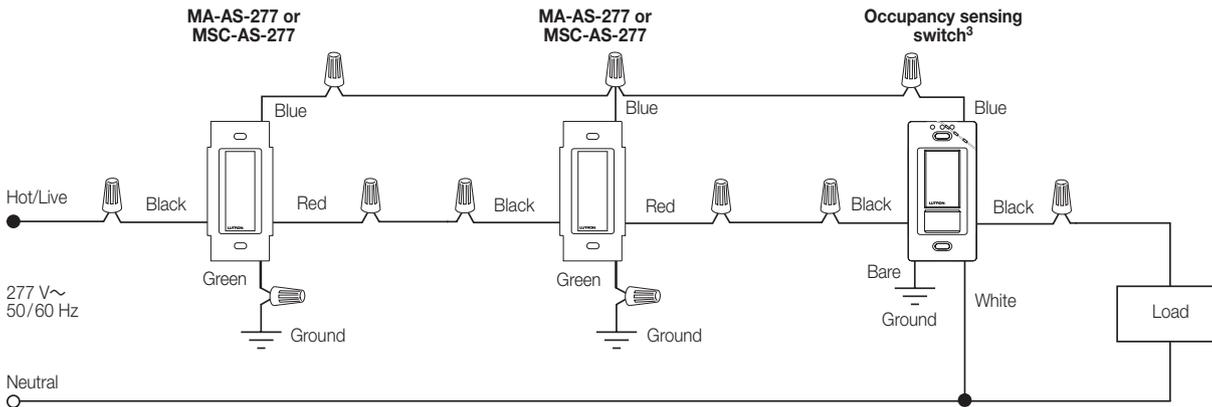
Multi-Location Installation (277 V∼)[1, 2, 3, 4]
-OPS6M2U-DV[5], -VPS6M2U-DV[5] with MA-AS-277 or MSC-AS-277

Wiring Diagram 8: Connect occupancy sensing switch to neutral

Multi-Location Installation (277 V∼)[1, 2, 3, 4]
-OPS6M2U-DV[6], -VPS6M2U-DV[6] with MA-AS-277 or MSC-AS-277

[1]   Only one Occupancy sensing switch can be used per multi-location circuit.
[2]   A single standard mechanical 3-way switch or up to 9 companion switches may be connected to most Occupancy sensing switches. Standard mechanical 3-way switch cannot be combined with companion switch. Total blue terminal wire length may be up to 150 ft (46 m).
[3]   Occupancy sensing switch can be installed in any location.
[4]   Fan load applies to 120 V∼ only (not for use with 277 V∼).
[5]   Green wire is connected to ground.
[6]   Wire covered by white sleeve is connected to neutral.

Job Name:	Model Numbers:
Job Number:	

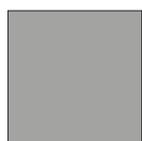# Colors and Finishes

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
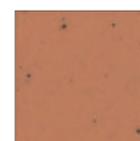
Biscuit
BI

Snow
SW

Palladium
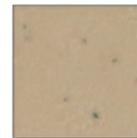PD

Midnight
MN

Sienna
SI

Terracotta
TC

Greenbriar
GB

Bluestone
BG

Mocha Stone
MS

Goldstone
GS

Desert Stone
DS

Stone
ST

Limestone
LS

Sea Glass
SG

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

Job Name:	Model Numbers:
Job Number:	