




Wireless Adapter (WA100-PM)

i. Installation Instructions




The Daintree WA100-PM Wireless Adapter forms part of the Daintree ControlScope wireless controls solution for smart commercial and industrial buildings. It transmits and receives messages over the wireless ZigBee® network and controls lights.

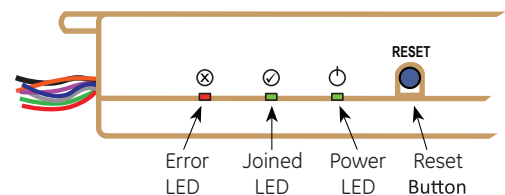
The WA100-PM is an AC powered device that provides On/Off switching as well as 0-10V analog dimming control for LED drivers and ballasts.* It also provides power for low voltage occupancy sensors, photosensors (daylight harvesters), wall switches, and control signals while it provides the wireless adaptation that enables them to communicate with the rest of the wireless control solution. The control signals to and from these connected devices pass between the WA100-PM and the Wireless Area Controller in ControlScope Manager (CSM), the Daintree management app.

Installation Process

- 1. Disconnect power before installation.** Turn off all power to affected light fixtures by turning off circuit breakers. Confirm that power is off at all light fixtures before continuing installation.
- Set the WA100-PM DIP switches to support the device(s) being connected to it. See **DIP Switch Settings** (pages 2-3).
- 3. IMPORTANT:** Affix the small label with 4-5 digits of the WA100-PM's IEEE address on the floor Plan to indicate its location.
- Mount the WA100-PM in the driver cavity of the light fixture, or external to the light fixture, or to a junction box approved for the application. See **Mounting** (page 13).
- Connect low voltage wiring from the WA100-PM to the driver, switch(es) and/or sensors as appropriate for your application. See **Wiring** (pages 4-11). Cap any unused wires.
- Connect line voltage wires from the supply circuit to the WA100-PM and to the driver as shown in **Wiring**. Cap any unused wire.
- Check load circuits then turn on the circuit breakers to power up the WA100-PM. The light connected to the WA100-PM turns On when power is initially applied (and when power is restored after a power failure).
- Ensure the WA100-PM green Power  LED is On.
- Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined  LED and the red Error  LEDs begin flashing.
- Perform the installation test appropriate for your application. See **Installation Tests** (pages 14-16) .



LED Indicators	
	Error—On when the Wireless Adapter is in an error state. Flashes once per second to indicate DIP Switch configuration error. Flashes to indicate unit Reset and during Installation Test Mode (red).
	Joined—On when the Wireless Adapter has joined a ZigBee® network. Flashes to indicate Reset and during sensor Installation Test Mode (green).
	Power—On when power is applied to the Wireless Adapter (green).



Wireless Adapter (WA100-PM)

WA100-PM Model Variants

The model number WA100 was the original version of the adapter and is no longer sold. The WA100-PM model monitors and measures the power consumption of the connected lighting load. The **WA100-PM** reports power measurement data to CSM.

Unless specifically noted, all references to the WA100-PM also apply to the WA100.

DIP switch settings

DIP switch settings enable the WA100-PM to operate appropriately for the type of lighting control it provides and the type of device(s) to which it is connected and adapting for wireless communication. **Set DIP switches based only on the devices that are physically wired to the WA100-PM.**

There are two primary adaptation modes to choose from as determined by the DIP switch 1 setting.

- In Light Adapter Mode, the settings are for the type of lighting control that is available on the connected driver, and/or the sensor type(s) connected to the WA100-PM.
- In the Switch Adapter Mode, settings are for the connected switch type and whether the WA100-PM is connected to a light.

Configure DIP switch settings only as shown in this instruction. **Incorrect switch settings will cause unexpected operation.**



After you change DIP switch settings, you need to press the blue **Reset** button for **3 seconds** to reset the unit. Release the button when the green Joined  and red Error  LEDs begin flashing.

Fig. 1: DIP switch location

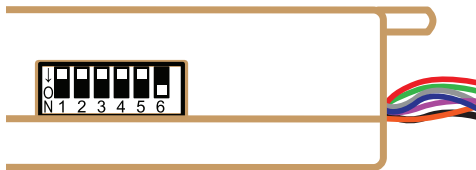




Fig. 2: DIP Switch Table — See **DIP switch Mode descriptions** for information about each option.

Mode	DIP Switch Positions: OFF  ON 	
Light Adapter	Driver type switches 1 to 4	Sensor switches 5 & 6
	On/Off + 0-10V dimming	Occupancy
	On/Off (no dimming)	Photosensor
	Alternate Switching	Both
	Bi-Level	None
	No Driver (sensors only)	Range Extender* no light, no sensor
*Valid only with firmware v2.6 or higher		
Switch Adapter	Switch type switches 1 to 4	Light output ID 5 & 6
	Dimming	Light + Switch (driver & switch are same type)
	On/Off (no dimming)	No Light (switch only)
	Alternate Switch	
	Bi-Level	

Wireless Adapter (WA100-PM)

DIP Switch Mode descriptions

Light Adapter Mode

Control Type

On/Off + 0-10V dimming: provides On/Off control using its line voltage Switched Load connection to the driver(s). It also provides 0-10V dimming control to the driver(s).

On/Off (no dimming): provides On/Off control using its line voltage Switched Load connection, and its low voltage digital output to an external relay. Note, both outputs are switched at the same time in this driver control mode.

Alternate: provides On/Off switching for one driver load using its line voltage Switched Load connection, and its low voltage digital output to an external relay to switch a second driver load. This allows lighting level control for no load (0%), one or the other of the two loads, and both loads (100%). See Figure 13.

Alternate Switching States		
Intensity Level	WA100 Switched	Aux Relay
Off (0%)	Off	Off
Low (1-49%)	On	Off
Medium (50-99%)	Off	On
Maximum (100%)	On	On

Bi-Level: provides On/Off switching for one driver with two loads using its line voltage Switched Load connection and low voltage digital output to an external relay to switch the second load. This allows lighting level to control for no load (0%), partial load (according to driver capability) or full load (100%). See Figure 12.

Bi-Level Switching States		
Intensity Level	WA100 Switched	Aux Relay
Off (0%)	Off	Off
Medium (1-99%)	On	Off
Maximum (100%)	On	On

No Driver (sensors only): provides wireless adaptation to connected occupancy sensor and/or photosensor only. No driver control.

Sensor

To provide wireless adaptation for sensors, set DIP switches 1, 5 & 6 according to the type(s) of sensors connected to the WA100-PM.

Range Extender

The WA100-PM joins the ZigBee network and acts only as a wireless repeater to improve the wireless range and/ or reliability. No lights or devices are connected to the WA100-PM.

Switch Adapter Mode

Switch Type

Dimming: operating the connected switch generates dimming and On/Off signals.

On/Off (no dimming): operating the connected switch generates On/Off signals.

Alternate: operating the connected switch will switch separate drivers, providing no load (0%), partial load (one or the other of the two loads, according to the driver loading) or full load (100%).

Bi-Level: operating the connected switch will switch loads independently in a bi-level driver (or 2 drivers), providing no load (0%), partial load (according to the driver capability or driver loading) or full load (100%).



Wireless Adapter (WA100-PM)

Switch Adapter Mode continued

Light output ID

Light + Switch (driver and switch are the same type): the connected driver matches the operational capability of the switch. For example:

- If the Switch type is “Dimming,” a dimming switch and 0-10V dimmable driver are both connected to the WA100-PM. **See Figure 10.**
- If the Switch type is “On/Off (no dimming)” an On/Off switch is connected to the WA100-PM digital input and On/Off driver(s) are connected to the WA100-PM’s line voltage Switched Load connection and/or an external relay connected to the WA100-PM’s low voltage digital output.
- If the Switch type is “Bi-Level,” a bi-level driver and bi-level switch connect to the WA100-PM.

No Light (switch only): provides wireless adaptation for the selected switch type only. No light is connected to the WA100-PM.

Occupancy Sensor Time Delays

Occupancy sensor time delays must be set for minimum.

When the ControlScope lighting control network is commissioned, time delays are set in the Daintree ControlScope Manager (CSM) system. These CSM “Off delays” start counting down after the sensor’s internal time delay expires. Therefore, set occupancy sensors for the minimum time delay during the WA100-PM installation.

Wiring

Line voltage wiring connects to the electrical supply circuit and to the driver(s). The Black (Hot) flying lead and the Red (Switched Load) flying lead are 14AWG. The White (Neutral) flying lead is 18AWG.

Low voltage 22AWG flying leads provide for connections to supply low voltage power and carry control signals to and from low voltage devices such as switches, dimmers, photocells, isolated relays and 0-10V analog dimming driver controls. **Do not connect any single low voltage device to more than one WA100-PM.**

While the WA100-PM is in Installation Test mode the low voltage devices connected to the WA100-PM directly control the lights wired to the same WA100-PM. After you exit Installation Test mode, the lights turn On and are NOT controlled by the devices connected to the WA100-PM.

After joining the wireless network, the control signals from the low voltage devices pass through the WA100-PM and are sent wirelessly to the ControlScope network. Depending on the zone and device configuration in the CSM, wireless signals from the WAC to the WA100-PM determine the operation of the light(s).

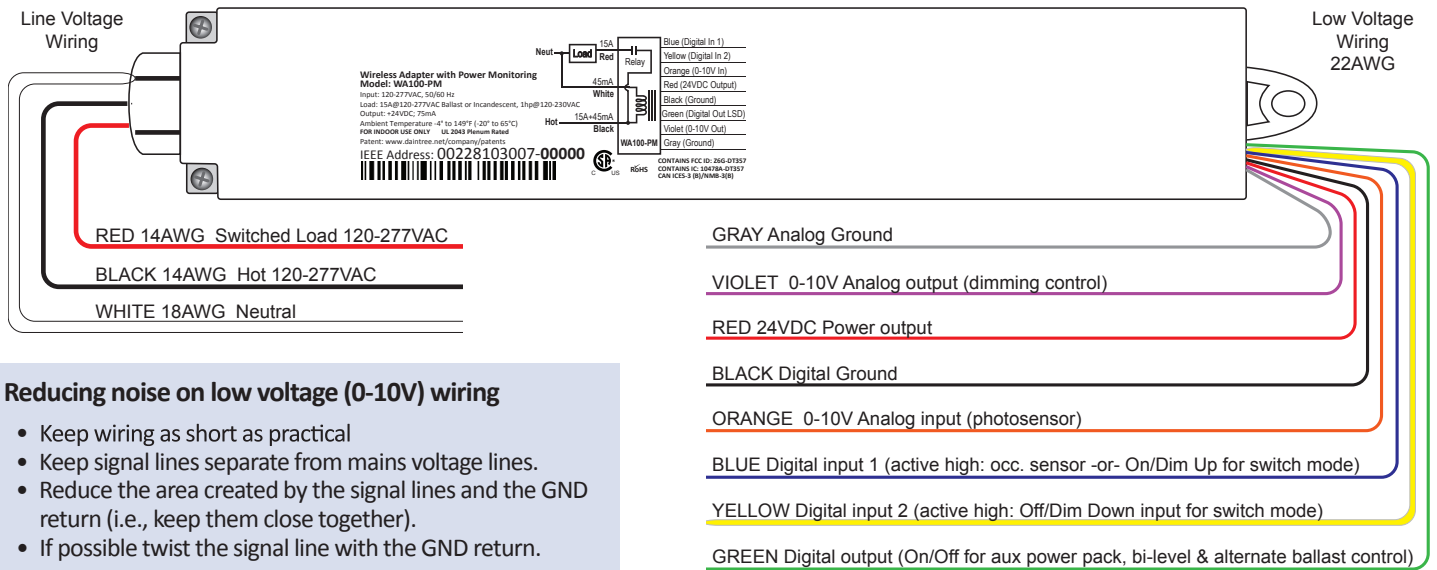
Design Caution

Wireless adapters must always be provided with uninterrupted power. Do not install a wireless adapter such as the WA100-PM to control an electrical circuit that provides power to other wireless devices or adapters. If power to wireless adapters or devices is shut off, control and communication with them is disabled.



Wireless Adapter (WA100-PM)

Fig. 3: Wiring Identification



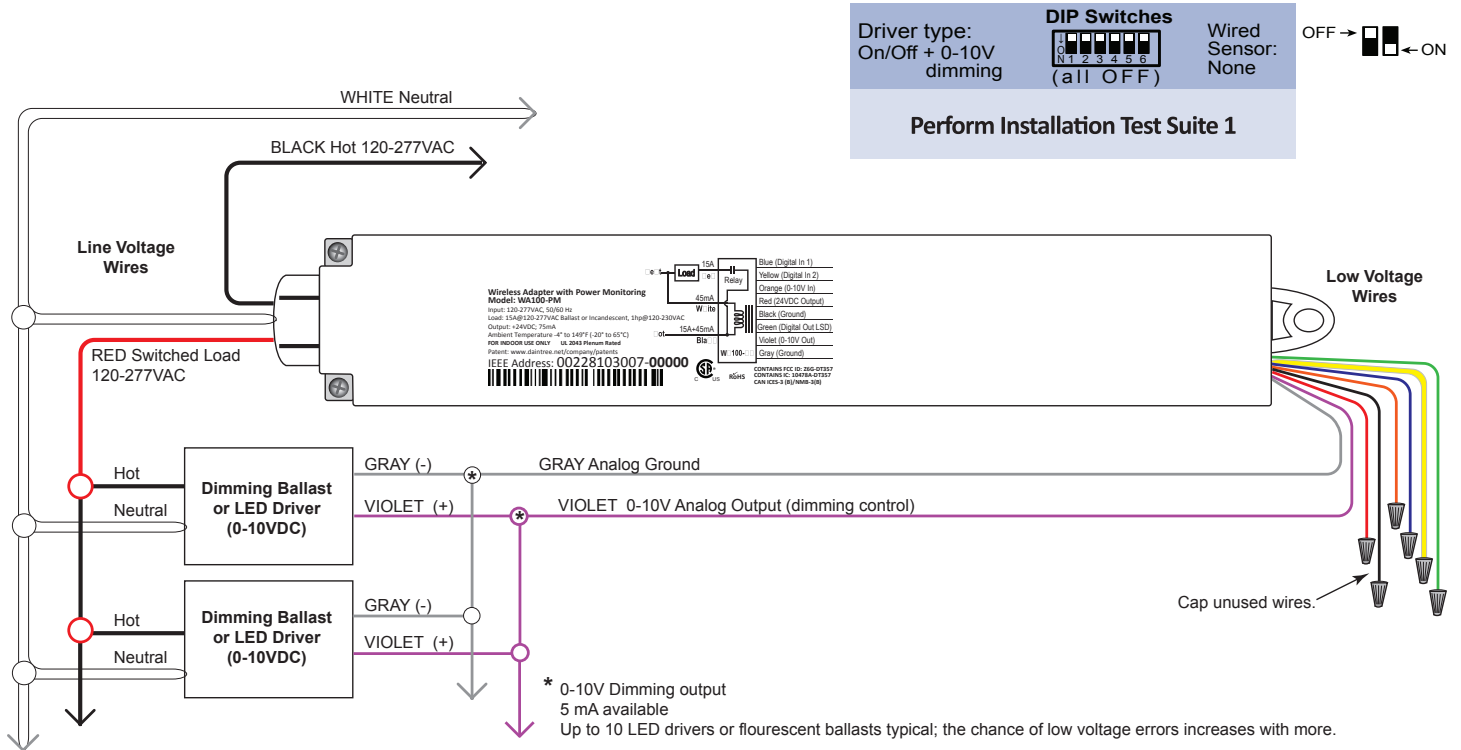
⚡ CAUTION: Risk of electrical shock ⚡

- Disconnect all power before installation and during servicing. Do not open WA100-PM enclosure; no user-serviceable parts inside.
- All installation and maintenance of line voltage equipment must be performed by a qualified electrician.
- The WA100-PM must be installed in accordance with all local, state, and national electrical codes and requirements.
- Wiring connectors are not supplied. UL recognized wiring connectors must be used in the installation.



Wireless Adapter (WA100-PM)

Fig. 4: Dimming Light Fixtures:

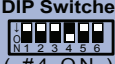


Wireless Adapter (WA100-PM)


Fig. 5: On/Off (non-dimming) Light Fixtures:

This configuration allows the WA100-PM to provide automatic On/Off switching of light fixtures.

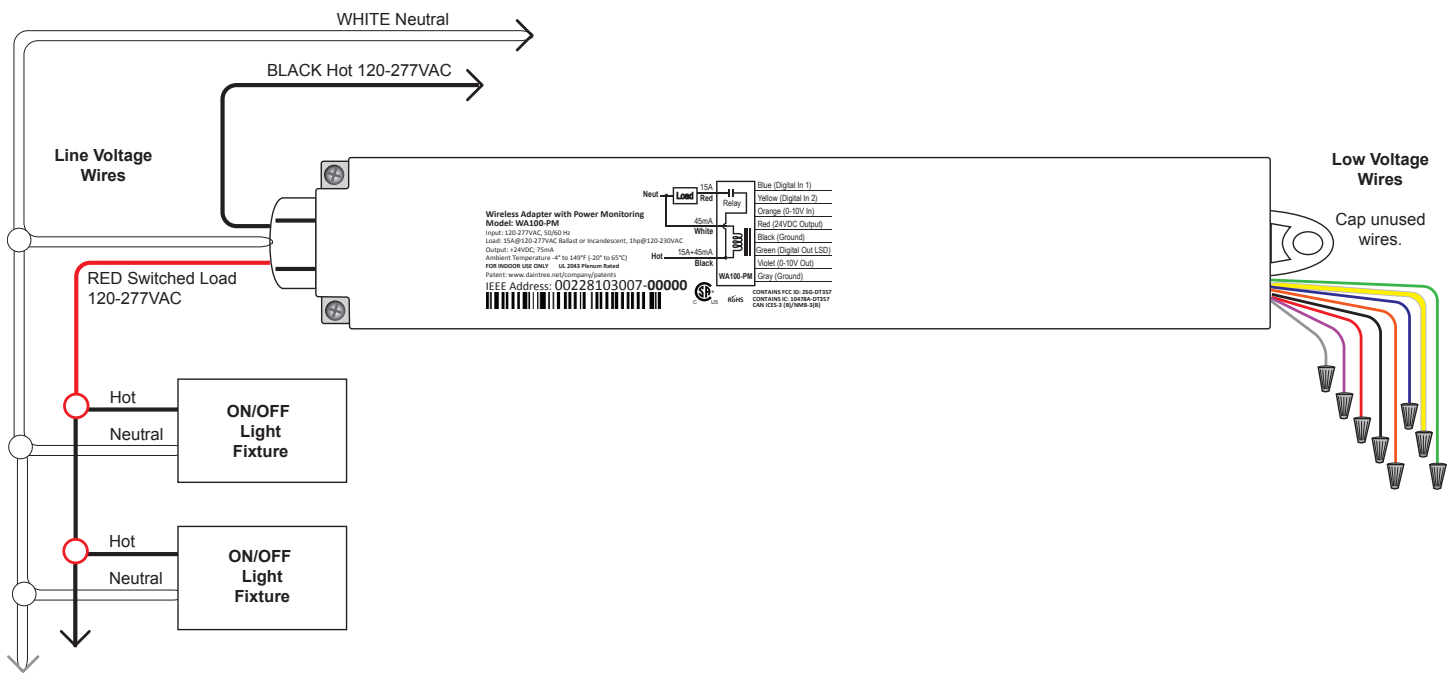
Driver type:
On/Off (no dimming)

DIP Switches

 (#4 ON)

Wired Sensor:
None

OFF →  ← ON

Perform Installation Test Suite 1




Wireless Adapter (WA100-PM)


Fig. 6: On/Off (non-dimming) Light Fixture(s), Occupancy Sensor configuration:

This configuration allows the WA100-PM to provide automatic On/Off switching based on occupancy. Set occupancy sensor for minimum time delay.

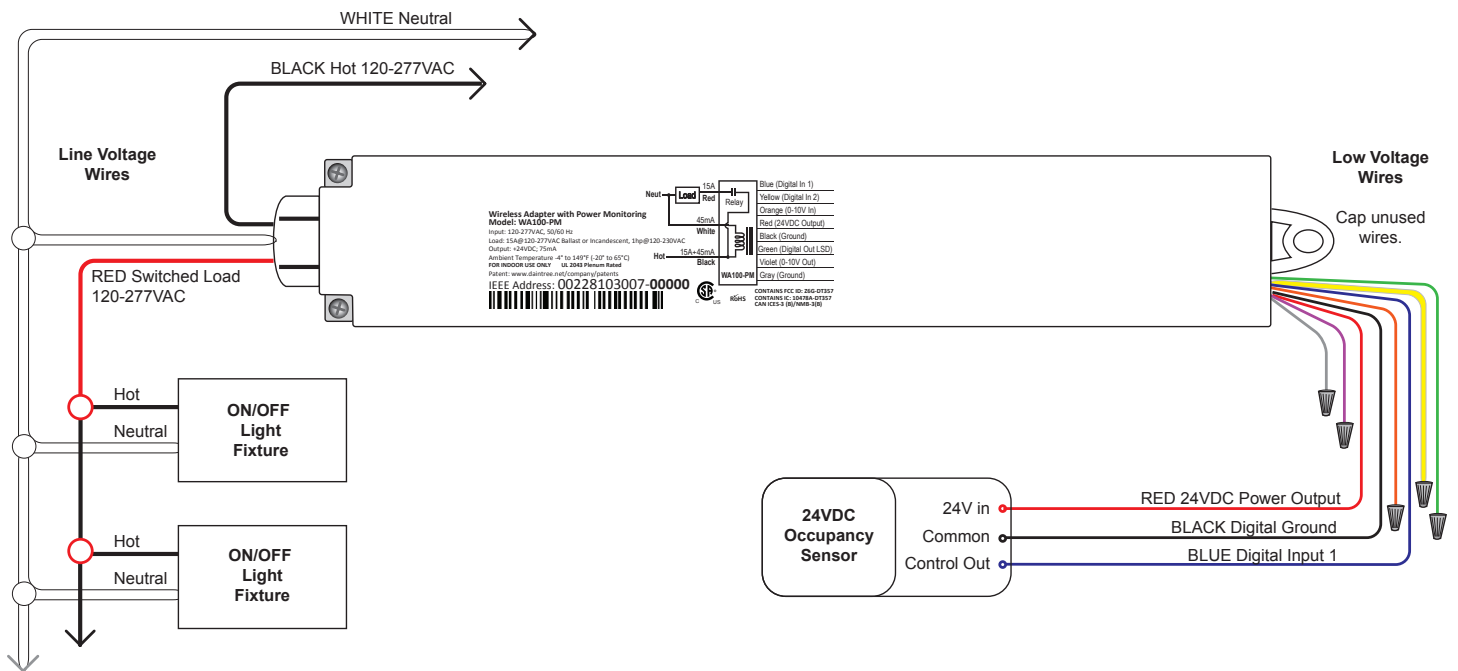
Driver type: On/Off (no dimming)

DIP Switches

 (#4.5 ON)

Wired Sensor: Occupancy

OFF →  ← ON



Perform Installation Test Suite 2

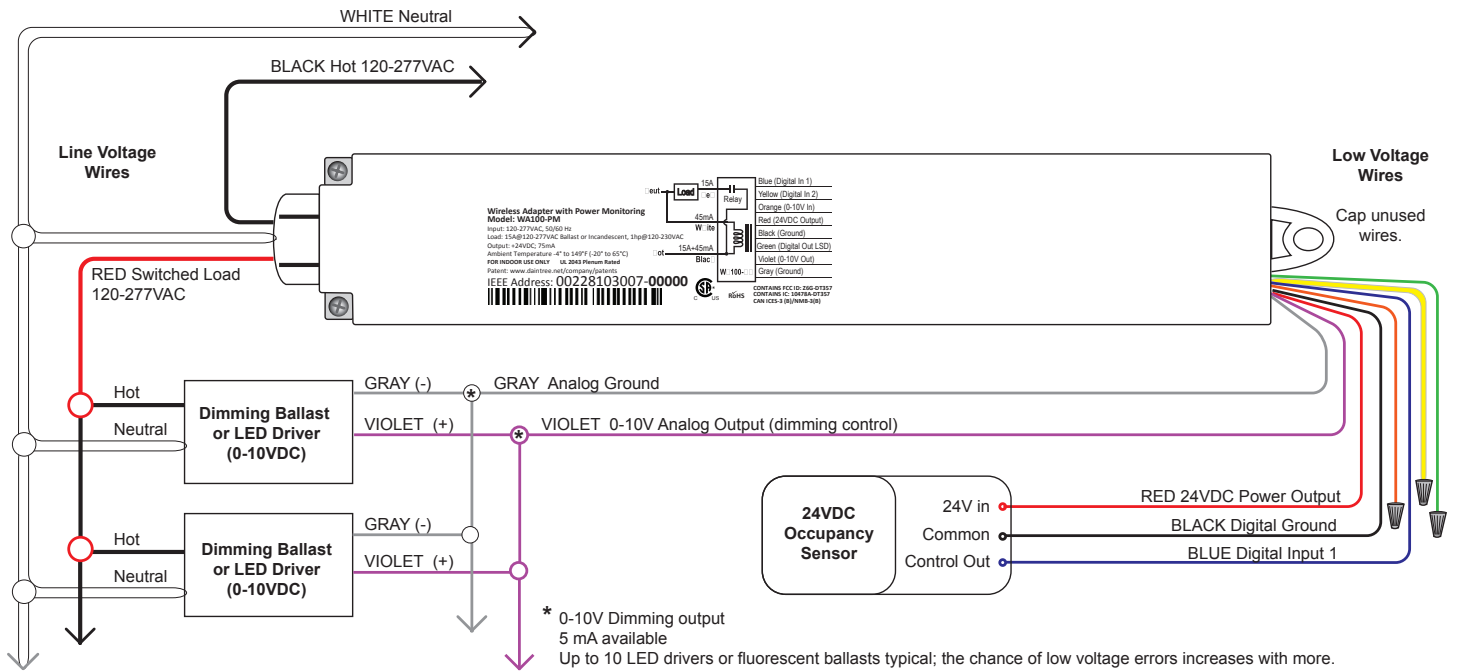


Wireless Adapter (WA100-PM)

Fig. 7: Dimming Driver(s), Occupancy Sensor configuration:

This configuration allows the WA100-PM to provide automatic 0-10V dimming control and to switch drivers On/Off based on occupancy. Set occupancy sensor for minimum time delay.

Driver type: On/Off + 0-10V dimming	DIP Switches  (# 5 ON)	Wired Sensor: Occupancy	OFF →  ← ON
Perform Installation Test Suite 2			



Wireless Adapter (WA100-PM)

Fig. 8: Dimming Light Fixture(s), Photosensor configuration:

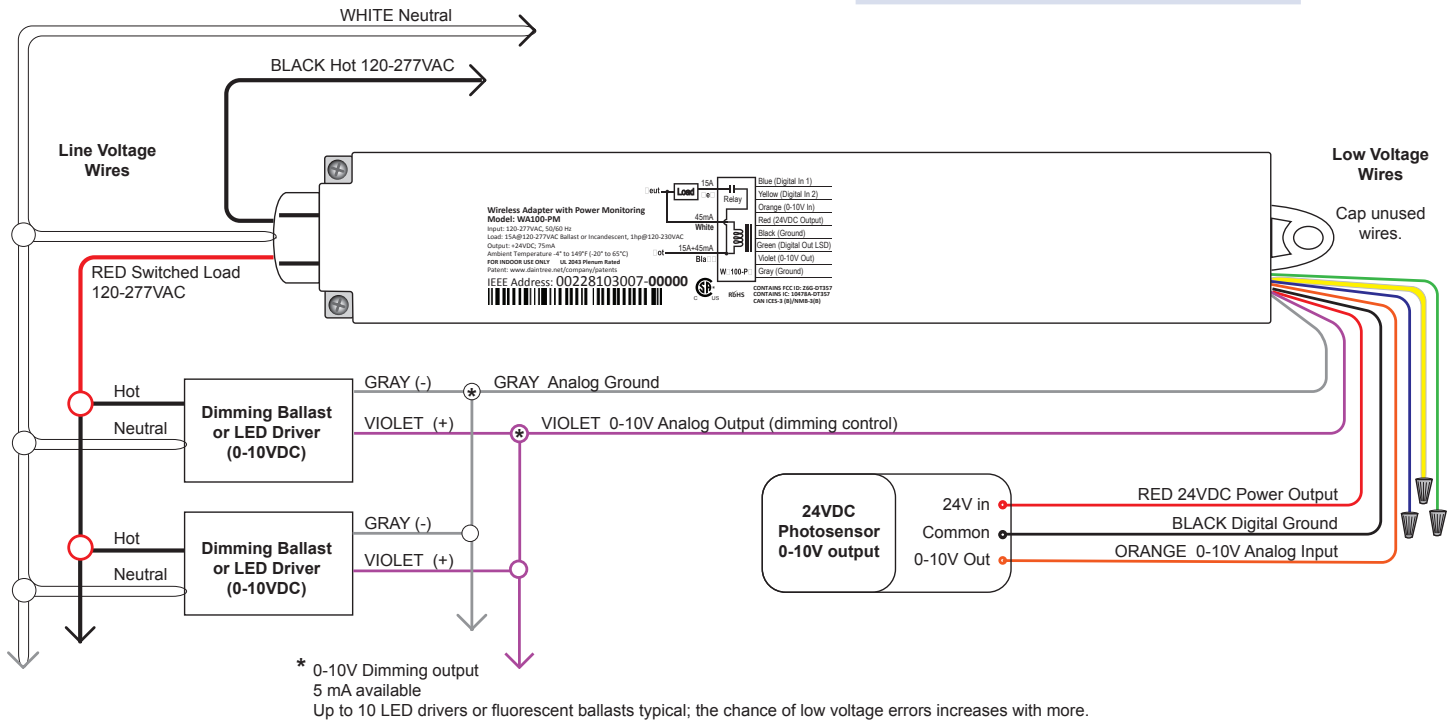
This configuration allows the WA100-PM to provide automatic 0-10V dimming control and to switch light fixtures On/Off.

Driver: On/Off + 0-10V dimming

DIP Switches (#6 ON)

Wired Sensor: Photosensor OFF → ON

Perform Installation Test Suite 8





Wireless Adapter (WA100-PM)

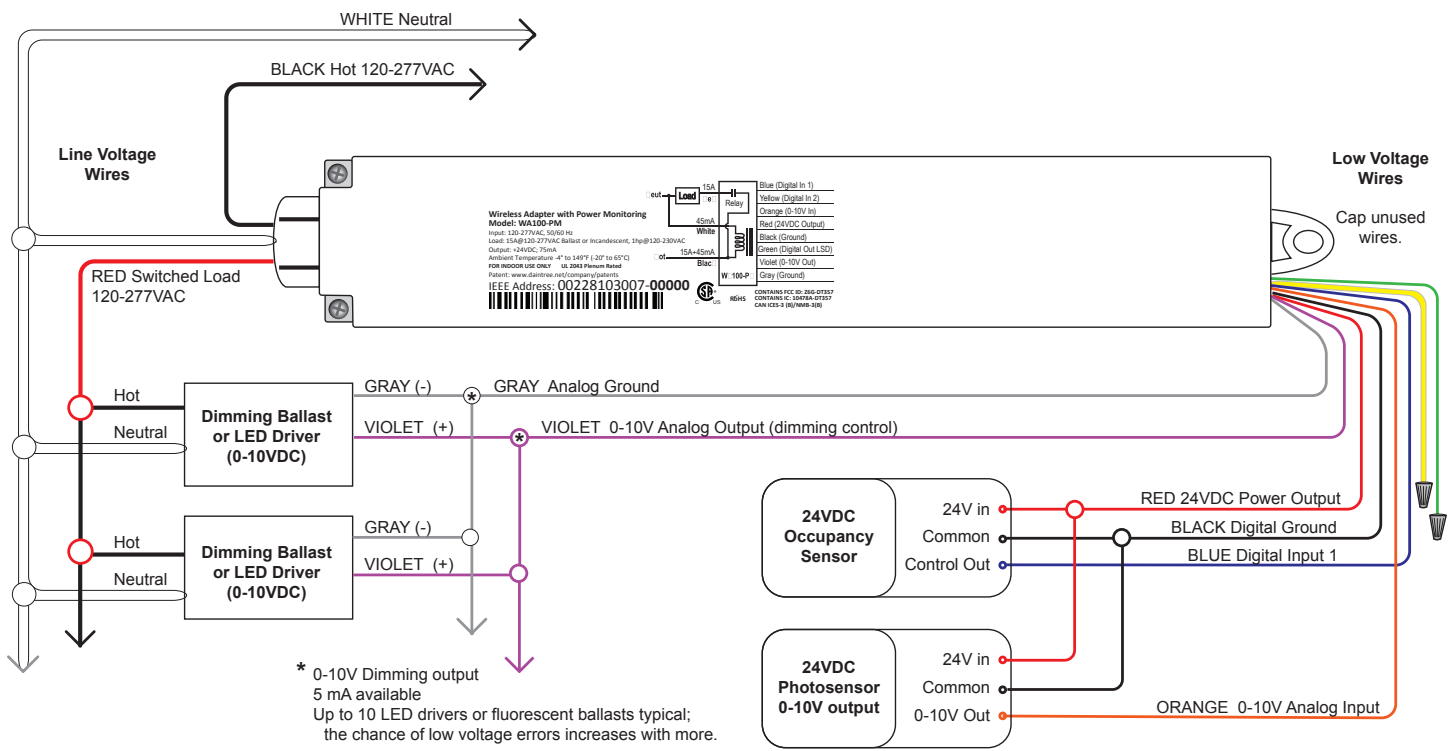
Fig. 9: Dimming Light Fixture(s), Photosensor, Occupancy Sensor configuration:

This configuration allows the WA100-PM to provide automatic 0-10V dimming control and to switch drivers On/Off. Set occupancy sensor for minimum time delay.

DIP Switches

Driver: On/Off + 0-10V dimming	 (#5,6 ON)	Wired Sensor: Occupancy + Photosensor	OFF →  ← ON
--------------------------------------	--	---	--


Perform Installation Test Suite 4




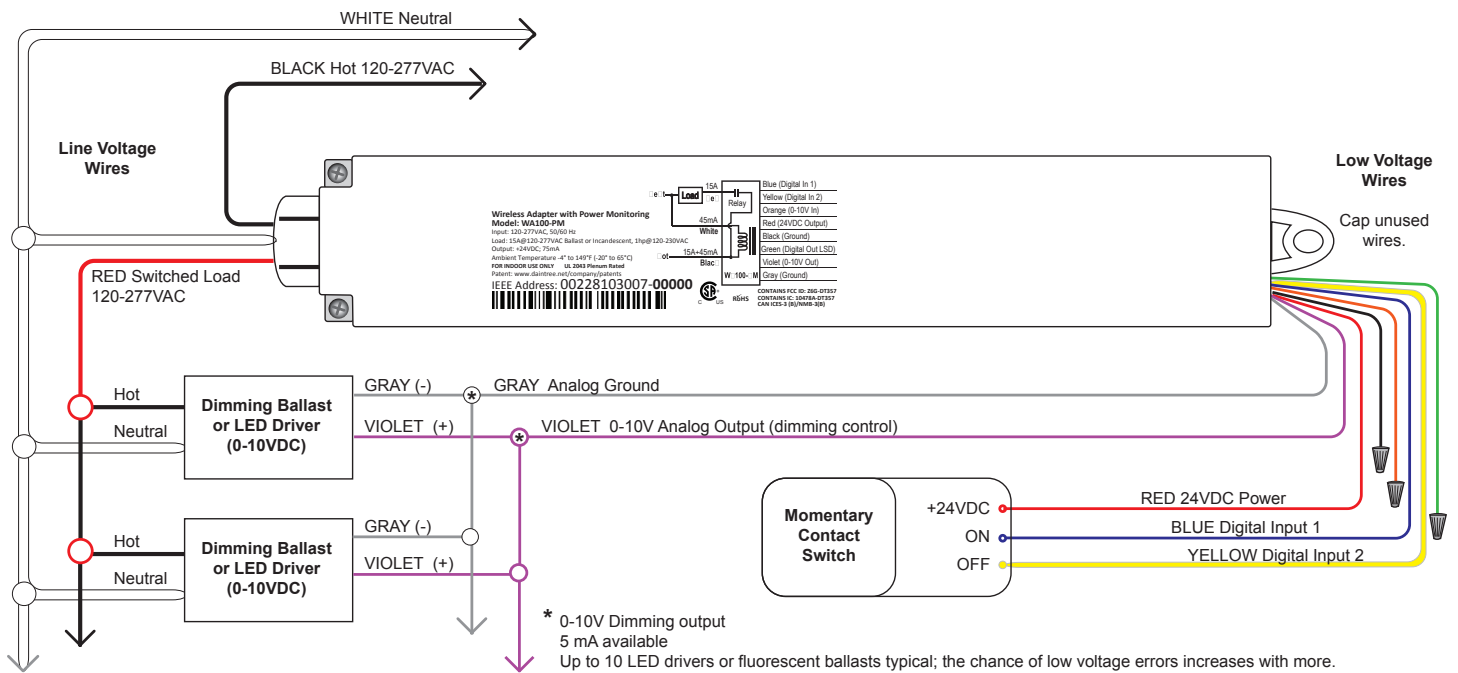
Wireless Adapter (WA100-PM)

Fig. 10: Dimming Light Fixture(s) and Switch configuration:

This configuration allows the WA100-PM to provide 0-10V dimming control and to switch light fixtures On/Off. It also provides manual On/Off control through a low voltage momentary contact switch.

Wired Switch Type: Dimming	DIP Switches	Light output: driver same as switch
		
Perform Installation Test Suite 1		

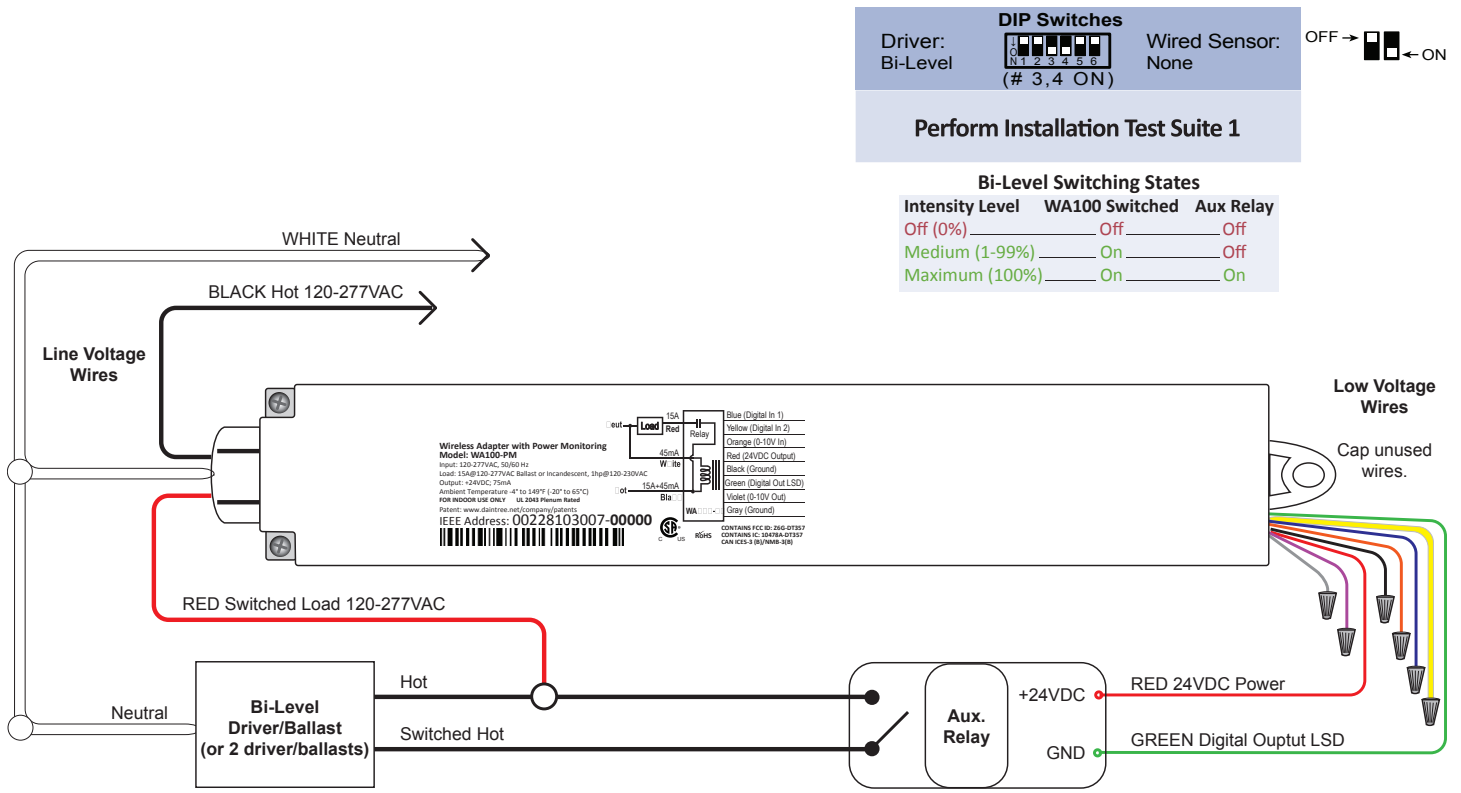
OFF →  ← ON



Wireless Adapter (WA100-PM)

Fig. 11: Bi-level Switching:

This configuration allows the WA100-PM to switch loads independently in a bi-level driver (or 2 drivers), providing no load (0%), partial load (according to the driver/ballast capability) or full load (100%).



Wireless Adapter (WA100-PM)

Fig. 12: Alternate Switching:

This configuration allows the WA100-PM to alternate in switching separate drivers, providing no load (0%), partial load (according to the driver loading) or full load (100%).

Always connect the smaller proportion of the total load to the WA100-PM's RED Switched Load wire.

DIP Switches

Driver: Alternate Switching
Wired Sensor: None

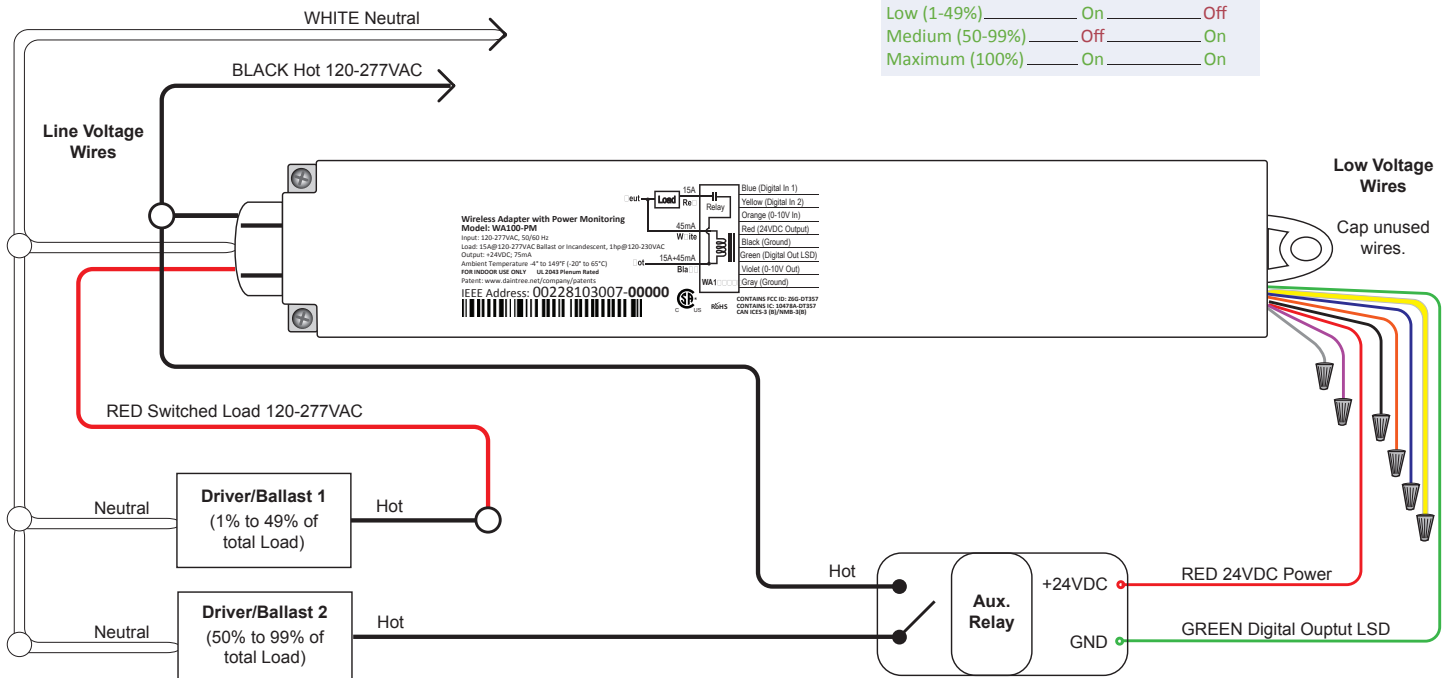
(# 3 ON)

OFF → ← ON

Perform Installation Test Suite 1

Alternate Switching States

Intensity Level	WA100 Switched	Aux Relay
Off (0%)	Off	Off
Low (1-49%)	On	Off
Medium (50-99%)	Off	On
Maximum (100%)	On	On




Wireless Adapter (WA100-PM)


Fig. 13: Switching a Branch Circuit:

This configuration allows the WA100-PM to provide On/Off switching of a branch circuit.

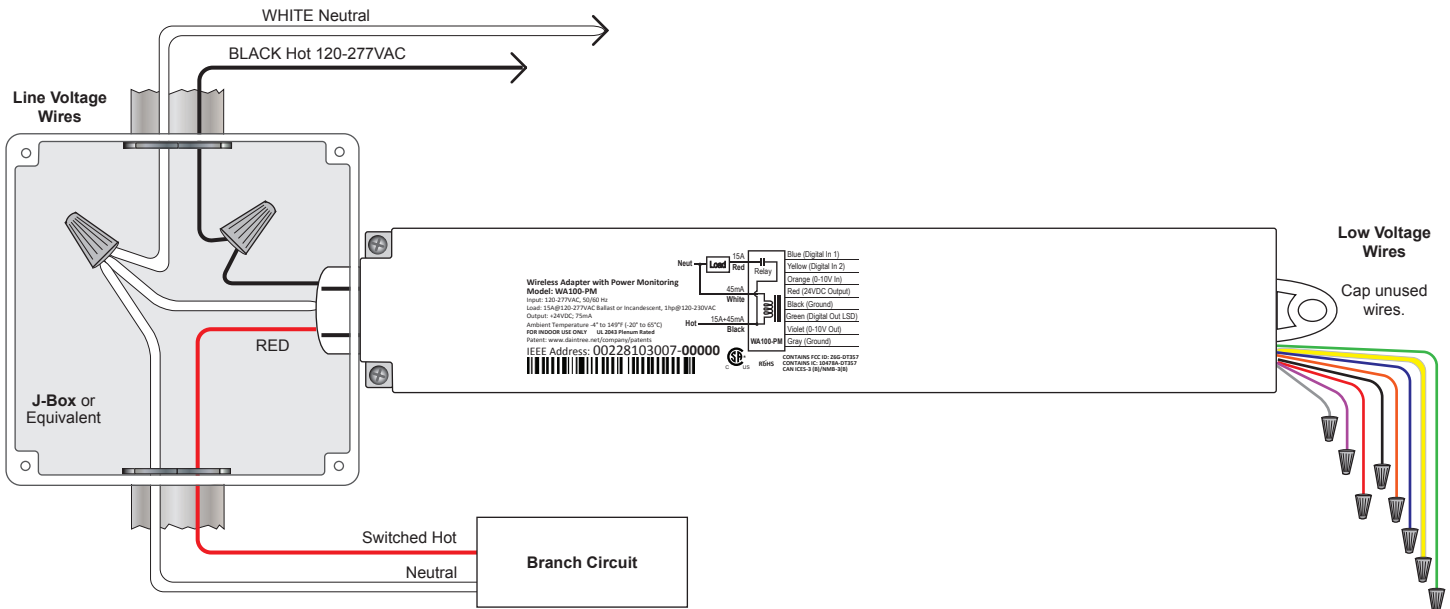
Driver type:
On/Off (no dimming)

DIP Switches

 (#4 ON)

Wired Sensor:
None

OFF →  ← ON

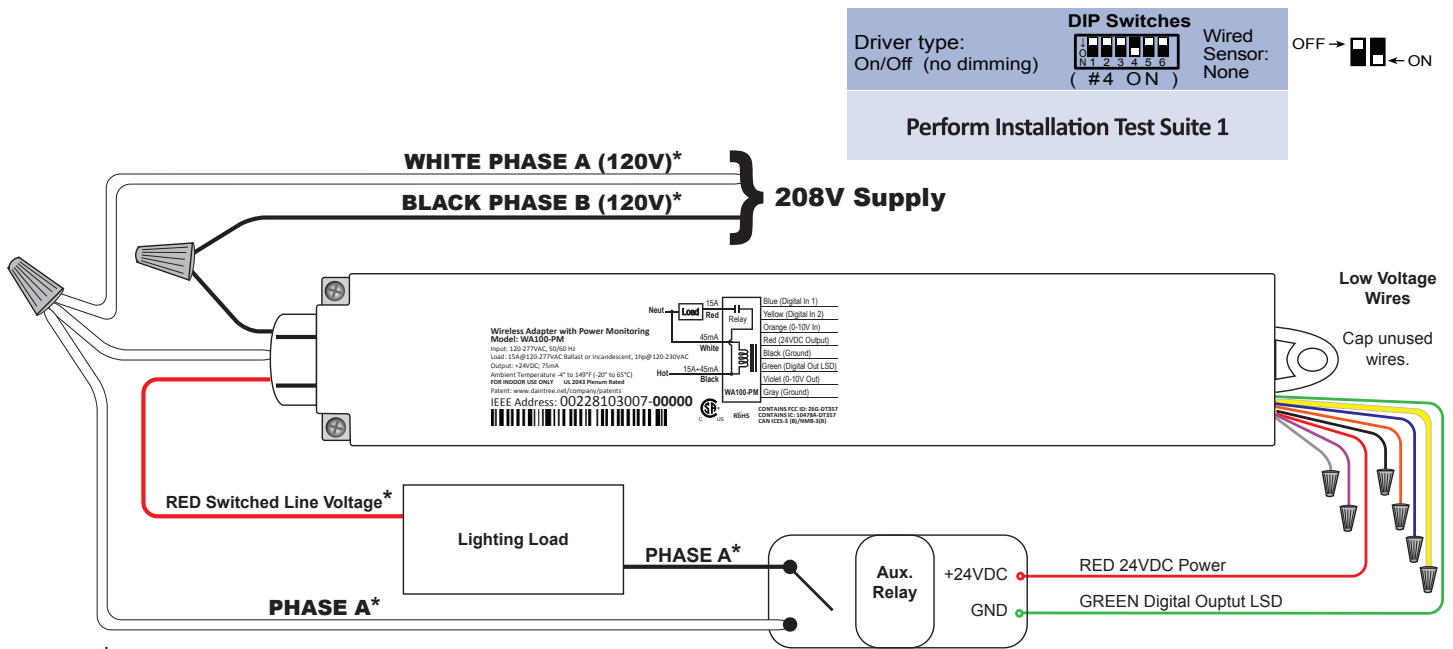
Perform Installation Test Suite 1



Wireless Adapter (WA100-PM)

Fig. 14: 208V 2-Pole (Phase-to-Phase) wiring

This configuration allows the WA100-PM to provide On/Off switching of a branch circuit.



* Line Voltage Wires and connections must be secured in an appropriate enclosure, in accordance with all local, state, and national electrical codes and requirements. Wiring connectors are not supplied. UL recognized wiring connectors must be used in the installation.



Wireless Adapter (WA100-PM)

Fig. 15: Switching Contactors:

This configuration allows the WA100-PM to provide On/Off switching control to an external contactor.

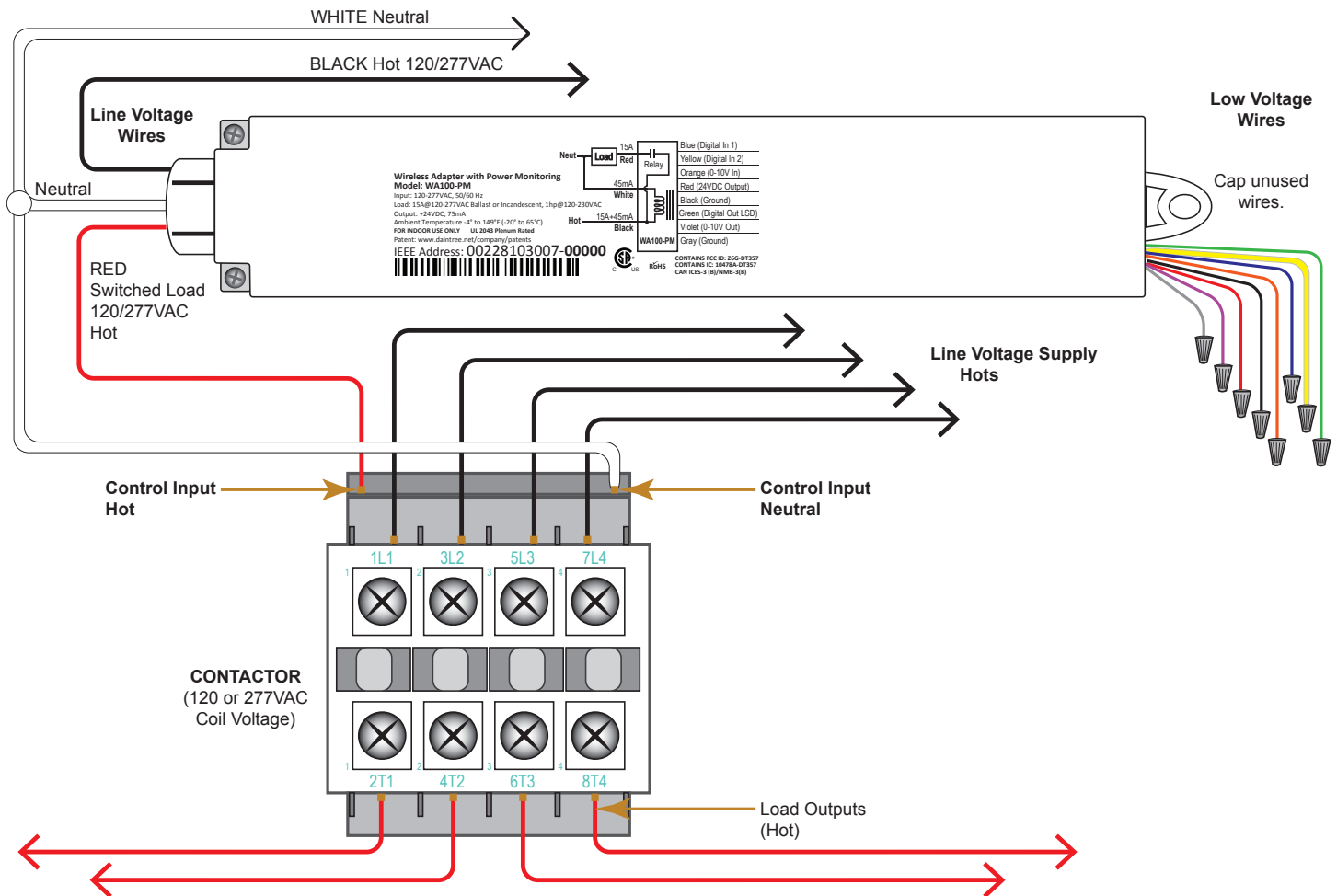
Driver type: On/Off (no dimming)

DIP Switches: (#4 ON)

Wired Sensor: None

OFF → ← ON

Perform Installation Test Suite 1

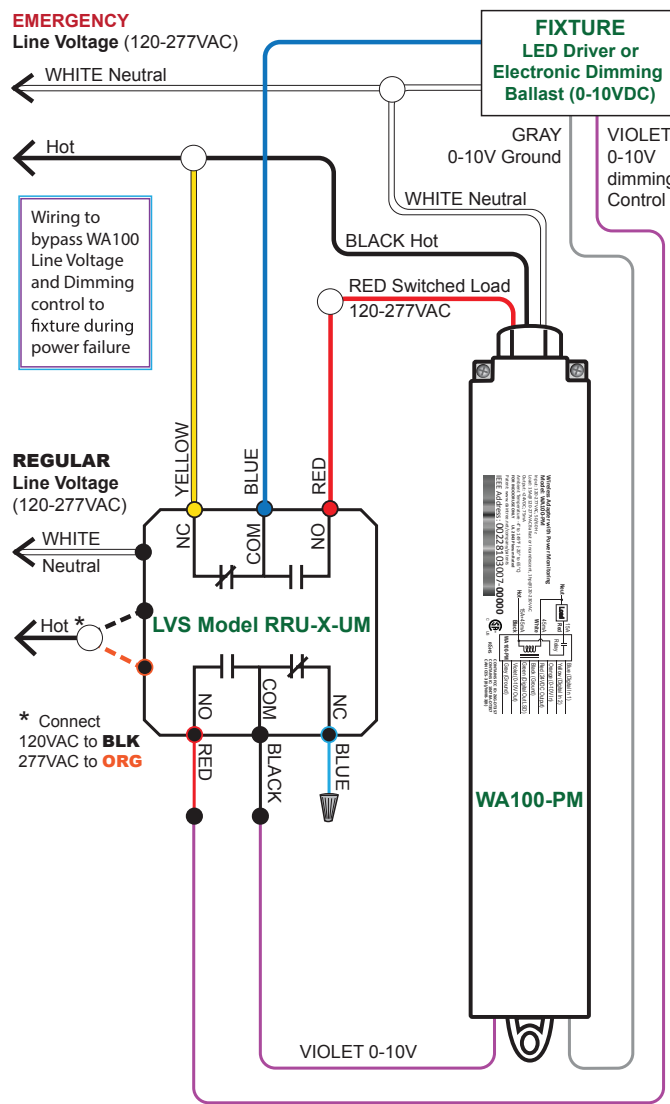


Wireless Adapter (WA100-PM)

Fig. 16: Bypass WA100 switched power and 0-10V dimming control during power failure

In the wiring diagram here, while Regular power is supplied to the LVS model RRU-X-UM the WA100-PM provides switched On/Off power and 0-10V dimming control to the fixture driver or ballast.

When the RRU-X-UM senses loss of Regular power it passes Emergency power directly to the fixture. It disconnects the WA100-PM switched output and disconnects the WA100-PM dimming control so that the fixture will operate at maximum output during the power failure.



Wireless Adapter (WA100-PM)

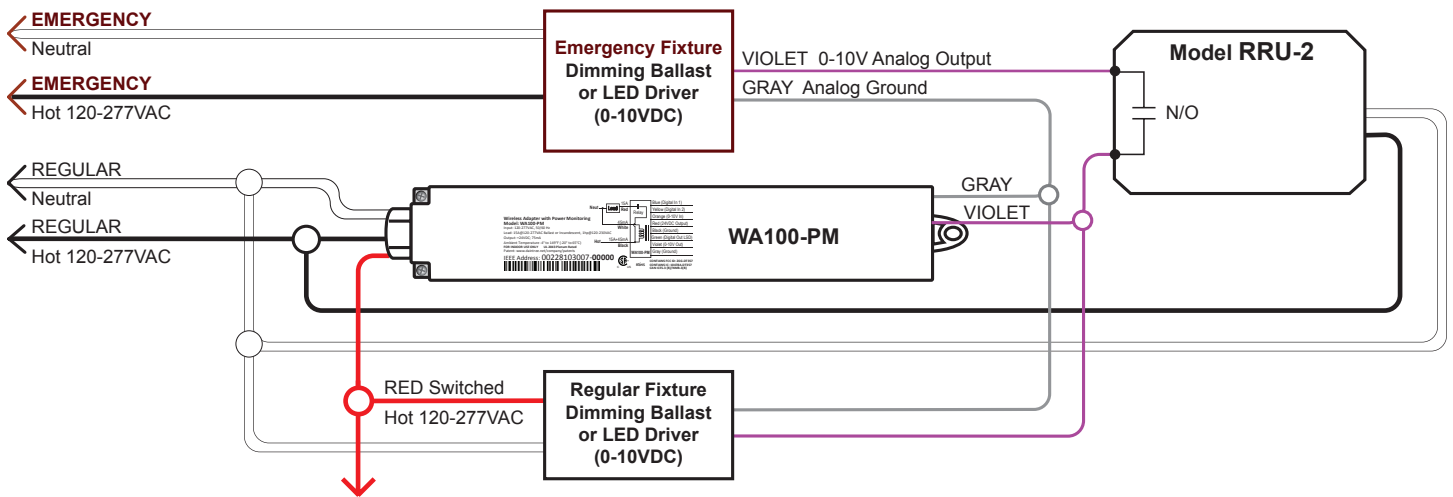
Fig. 17: Emergency and Regular Light Fixtures: Wiring to Dim while Regular Power is Available

In this application, the WA100-PM is powered by the Regular power circuit and is installed inside the Regular Light Fixture. While Regular power is supplied to the RRU-2 the WA100-PM provides switched On/Off power to the Regular Light Fixture.

The WA100-PM also controls dimming to the Regular and Emergency Light Fixture. The 0-10V dimming circuit from the WA100-PM is brought into the Emergency Light Fixture. The Emergency Light Fixture is powered by the Emergency power circuit.

When the RRU-2 senses loss of Regular power, the RRU-2 disconnects the 0-10V output from the WA100-PM and the Emergency Light Fixture operates at maximum output from the Emergency power circuit. (Note: If the RRU-2 is not installed, the Emergency Fixture will dim to minimum because the WA100-PM 0-10V output shorts when the adapter loses power.)

Set DIP switches and perform Installation Test appropriate to 0-10v dimming and connected sensors.



Wireless Adapter (WA100-PM)

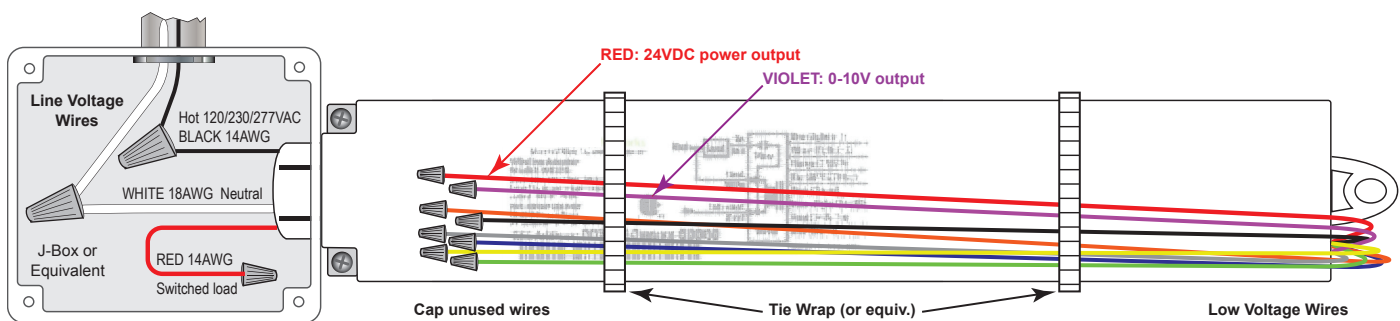
Trimming and Dressing

When the wiring connections have been decided and extra (unused) wires identified, secure the unused wires to keep them neat, out of the way, and protected against shorting or interference with other components, wiring, or devices. It is best to trim unused wires to about 5 inches in length, isolate them using a wire nut or equivalent, then bundle and bind them close to the adapter's body. Be sure that unused Red and Violet output wires are completely isolated from all other wires. Unused line voltage wires must be securely isolated and housed inside a junction box, or other approved electrical enclosure.

Securing Low Voltage Wires

1. Make sure the unit is NOT powered.
2. Cut the unused low voltage wires approximately five inches from where they exit the WA100-PM body.
3. Isolate the end of each wire using a wire nut, shrink tubing, or equivalent.
4. Wrap the unused low voltage wires around the side of the adapter in a bunch, and secure them in place using a white or clear cable tie.

Fig. 18: Secure unused wires



Wireless Adapter (WA100-PM)

Mounting

The WA100-PM is designed so that it can be mounted in a variety of ways. Depending on the construction of the fixture and its ability to propagate radio signals, it can be mounted inside the fixture in the ballast/driver channel. A printed bar code label with the full IEEE address is included with the WA100-PM. Affix this label to the outside of the fixture. Choose a standard location so that when someone looks for fixtures containing a WA100-PM, they will easily find it.

Using the Mounting Bracket

The mounting bracket included with the WA100-PM and shown in the illustration below provides a screw-mounting alternative. The bracket has a slot that allows wires to remain connected as you snap the bracket onto the WA100-PM nipple. The WA100-PM can be secured at the other end using the integral screw tab.

Alternatively, it can be mounted externally to a junction box, enclosure, or fixture housing through a 1/2" knockout.

Fig. 19: Mounting in driver channel

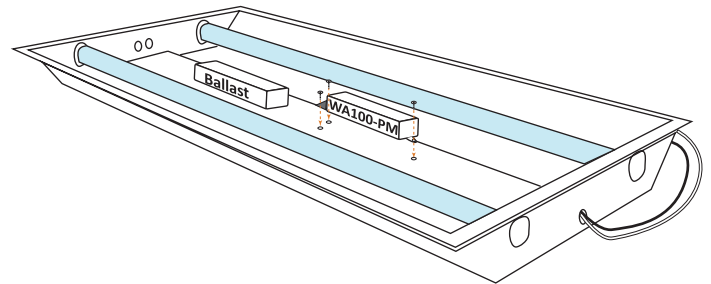


Fig. 20: Mounting with the included bracket

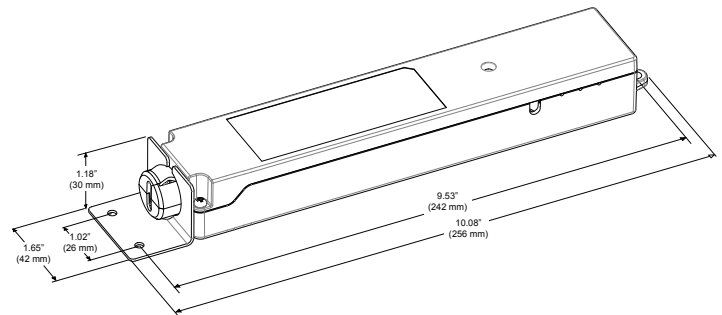
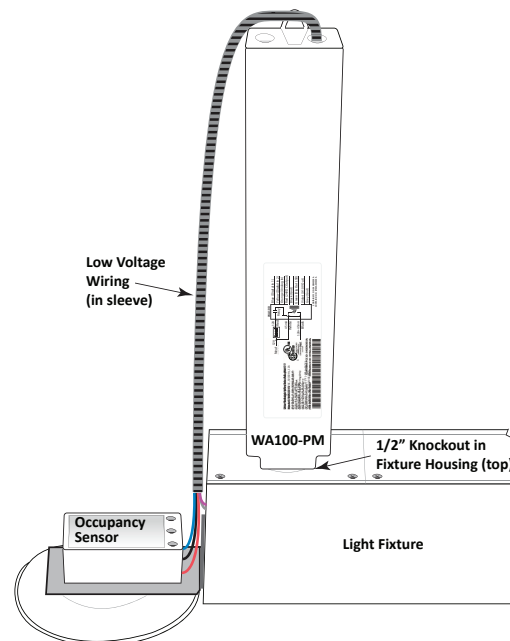


Fig. 21: Mounting external to the top of a suspended fixture



Wireless Adapter (WA100-PM)

Installation Tests

All lighting devices, including wireless adapters, must be tested for proper operation.

After setting the DIP switches for your application, mounting, wiring low voltage, wiring line voltage, powering up and resetting the unit, perform the recommended Installation Test. The Installation Test mode automatically times out after 5 minutes of no activity.

While the WA100-PM is in Installation Test mode, the low voltage devices connected to the WA100-PM directly control the lights wired to the same WA100-PM. After you exit the Installation Test mode, the lights turn On and are NOT controlled by the devices connected to the WA100-PM. After commissioning the ControlScope system, lighting control is determined by configuration settings in the ControlScope Manager.

IMPORTANT NOTICES

Complete Installation Tests

Successful commissioning is dependent on testing each wireless-adapted lighting fixture and/or control device at the time of installation. Finding installation issues or device problems earlier saves significant time during the commissioning process.



Record IEEE Addresses

If you have not already done so, be sure that each WA100-PM's IEEE address (last 4 or 5 digits) is recorded on the facility floor plan. You can use the 4 or 5 digit label supplied with the WA100-PM or you can write the last 4 or 5 digits on the floor plan. This information will be used during the commissioning process.

After the lighting installation is complete, a marked-up copy of the facility floor plan showing the identity and location of each wireless adapter (including associated light fixtures, switches and sensors) should be available. This will simplify and expedite the commissioning process.

Test Suite 1:



On/Off, Dimming, Alternate Switching or Bi-Level Drivers Only

1. Press and immediately release the blue Reset button. The red Error LED flashes once, then pauses and repeats.
2. Check that the connected lights cycle On and Off, or cycle from maximum to minimum brightness then turn Off per the DIP switch configuration.
3. Press and immediately release the Reset button to exit testing.
4. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined  LED and the red Error  LEDs begin flashing.

Wireless Adapter (WA100-PM)



Test Suite 2:

Any Driver + Occupancy Sensor

1. Press and immediately release the blue Reset button. The red Error LED flashes once, then pauses and repeats.
2. Check that the connected lights cycle On and Off, or cycle from maximum to minimum brightness then turn Off per the DIP switch configuration.
3. Press and immediately release the blue Reset button again. The red Error LED flashes twice, then pauses and repeats.
4. Trigger the occupancy sensor. The light connected to the driver turns On. When the sensor times out the light turns Off.
5. Press and immediately release the Reset button to exit testing.
6. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined  LED and the red Error  LEDs begin flashing.

Test Suite 3:

Dimming Driver + Occupancy Sensor + Photosensor

1. Press and immediately release the blue Reset button. The red Error LED flashes once, then pauses and repeats.
2. Check that the lights connected to the driver cycle from maximum to minimum brightness then turn Off, then repeat.
3. Press and immediately release the blue Reset button. The red Error LED flashes twice, then pauses and repeats.
4. Trigger the occupancy sensor. The green Joined LED turns On and the light connected to the driver turns On. When the sensor times out the Joined LED and light turns Off.
5. Press and immediately release the blue Reset button again. The red Error LED flashes three times, then pauses and repeats.
6. The light connected to the driver turns On.
7. The light's output is proportional to the amount of light received by the photosensor.
 - For dimming lights, shine a bright light at the photosensor – the light gets brighter. Cover the photosensor – the light gets dim.
 - For switched lights, cover the photosensor – the light turns Off. Shine a bright light at the photosensor – the light turns On.
8. Press and immediately release the Reset button to exit testing.
9. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined  LED and the red Error  LEDs begin flashing.

Wireless Adapter (WA100-PM)

Test Suite 4:

Any Switch(es) + Any Matching Light Type(s)

1. Press and immediately release the blue Reset button. The red Error LED flashes once, then pauses and repeats.
2. Check that the connected lights cycle On and Off, or cycle from maximum to minimum brightness then turn Off per the DIP switch configuration.
3. Press and immediately release the blue Reset button again. The red Error LED flashes four times, then pauses and repeats.
4. Operate the switch(es) connected to the WA100-PM and observe that the lights turn On, Off, and Dim as expected.
5. Press and immediately release the Reset button to exit testing.
6. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.

Test Suite 5:

Occupancy Sensor Only

1. Press and immediately release the blue Reset button. The red Error LED flashes twice, then pauses and repeats.
2. Trigger the occupancy sensor. The green Joined LED turns On. When the sensor times out the Joined LED turns Off.
3. Press and immediately release the Reset button to exit testing.
4. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.

Test Suite 6:

Photosensor Only

1. Press and immediately release the blue Reset button. The red Error LED flashes three times, then pauses and repeats.
2. The green Joined LED begins to flash. Increase the amount of light at the photosensor by shining a bright light at it. The green Joined LED flashes at a faster rate.
3. Press and immediately release the Reset button to exit testing.
4. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.

Test Suite 7:

Switch Only (On/Off, Dimming, Alternate Switching or Bi-Level)

1. Press and immediately release the blue Reset button. The red Error LED flashes four times, then pauses and repeats.
2. Operate the switch connected to the WA100-PM. The green Joined LED turns On for the duration of the switch activation (applies to On, Off, and Dim functions).
3. Press and immediately release the Reset button to exit testing.
4. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.



Wireless Adapter (WA100-PM)

Test Suite 8:

Dimming Driver + Photosensor

1. Press and immediately release the blue Reset button. The red Error LED flashes once, then pauses and repeats.
2. Check that the lights connected to the driver cycle from maximum to minimum brightness then turn Off, then repeat.
3. Press and immediately release the blue Reset button again. The red Error LED flashes three times, then pauses and repeats.
4. The light connected to the driver turns On.
5. Increase the amount of light at the photosensor by shining a bright light at it. The light's output is proportional to the amount of light received by the photosensor.
 - For dimming lights, shine a bright light at the photosensor – the light gets brighter.
Cover the photosensor – the light gets dim.
 - For switched lights, cover the photosensor – the light turns Off.
Shine a bright light at the photosensor – the light turns On.
6. Press and immediately release the Reset button to exit testing.
7. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.

Test Suite 9:

Occupancy Sensor + Photosensor

1. Press and immediately release the blue Reset button. The red Error LED flashes twice, then pauses and repeats.
2. Trigger the occupancy sensor. The green Joined LED turns On. When the sensor times out the Joined LED turns Off.
3. Press and immediately release the blue Reset button again. The red Error LED flashes three times, then pauses and repeats.
4. The green Joined LED begins to flash. Increase the amount of light at the photosensor by shining a bright light at it. The green Joined LED flashes at a faster rate.
5. Press and immediately release the Reset button to exit testing.
6. Press and hold the blue RESET button on the WA100-PM for 3 seconds to reset the unit. Release the button when the green Joined ✓ LED and the red Error ✗ LEDs begin flashing.



Wireless Adapter (WA100-PM)

Joining the ZigBee Lighting Control Network

After the Installation Test is complete the WA100-PM is ready to communicate with the Daintree Wireless Area Controller (WAC) and the Daintree ControlScope Manager (CSM) web-based lighting management user interface. Upon commissioning, the WA100-PM "Join" LED turns on solid and remains on as long as the WA100-PM is included in the ZigBee Network.

After joining the network, the low voltage devices connected to the WA100-PM do not directly control the lights that are wired to the same WA100-PM. The control signals from the low voltage devices pass through the WA100-PM and are sent wirelessly to the ControlScope network. Depending on the zone and device configuration in the CSM, wireless signals from the WAC to the WA100-PM determine the operation of the light(s).

For more information about configuring the lighting control network, see the instructions and on-line help provided with the ControlScope Manager application.

Troubleshooting

The Installation Test procedure fails.

1. Confirm that the WA100-PM is powered.
2. Check the connections from the WA100-PM to the driver(s) and low voltage control devices.
3. Check to be sure the WA100-PM DIP switch settings are correct.
4. Press and hold the Reset button for 3 seconds to reset the WA100-PM.
5. Perform the Installation Test again.

Connected lights do not turn Off during the occupancy sensor Installation Test.

1. Make sure the sensor is not detecting occupancy.
2. Check the occupancy sensor time delay and make sure it is set for minimum.
When the ControlScope lighting control network is commissioned, time delays are set in the Daintree CSM system. These CSM "Off delays" start counting down after the sensor's internal time delay expires. Therefore, set occupancy sensors for the minimum time delay during the WA100-PM installation.

The red Error LED is flashing once every second.

DIP switch configuration is invalid. At least one DIP switch must be On to enable an interface.

1. Enable the interface(s) that are connected by turning appropriate DIP switch(es) On.
2. Press the blue **Reset** button for **3 seconds** to reset the unit.



Wireless Adapter (WA100-PM)

FCC warning message

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada (IC) Warning Message

Product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. CAN ICES-005 B / NMB-005 B

Specifications

Input Voltage	120-277VAC, 50-60Hz
Switched Output Relay	15A driver/incandescent @ 120-277VAC 1hp @ 120-230VAC (switched to Hot/Active)
Low Voltage Output	24VDC; 75mA maximum
Low Voltage Wiring	Intel® Atom™ Processor E3805
Memory and Storage	22AWG, 600V, UL 1015, plenum rated Max. recommended length of up to 100' (30m)
Analog Dimming	0-10VDC, 5mA max (sink or source), up to 10 typical 0.5mA sinking drivers/ballasts*
Analog Input	Photosensor 0-10VDC
Digital Inputs (2)	Active high. Occupancy sensor, Dim Up/Down (switch mode)
Digital Output	LSD (low side driver) aux relay control, 75mA maximum (including attached sensors)
Radio Properties	2.4 GHz, +8 dBm, Range dependent on RF propagation variables such as metal obstacles
Operating Environment	Indoor, dry location -4o to 149oF (-20o to 65oC)
Compliance	CSA certified, plenum rated, FCC Part 15, CA IC
Mounting	½" knockout, screw tab, optional mounting bracket supplied
Dimensions	9.4" L x 1.7" W x 1.18" H 10.1" L x 1.7" W x 1.18" H with mounting bracket

* "Driver" references include "ballasts" unless otherwise noted.



Plug Load Applications (WA100-PM)

ii. Appendix 1: Installation Advisory - Plug Load Applications (WA100-PM)

Plug load control functionality for the WA100-PM is made available with WA100-PM firmware provided in ControlScope Manager version 3.5.3.1. During testing the Plug Load cycles on/off in sync with the lighting load. Relays used to control plug loads must be compliant with UL498 (Attachment Plug and Receptacles) or equivalent.

Wiring for Combination Plug Load (Basic Aux Relay) and Dimming Light

In the wiring diagram below, the WA100-PM is used to control both a dimming light and a plug load circuit.

Driver: On/Off + 0-10V dimming
Plug Load: On/Off

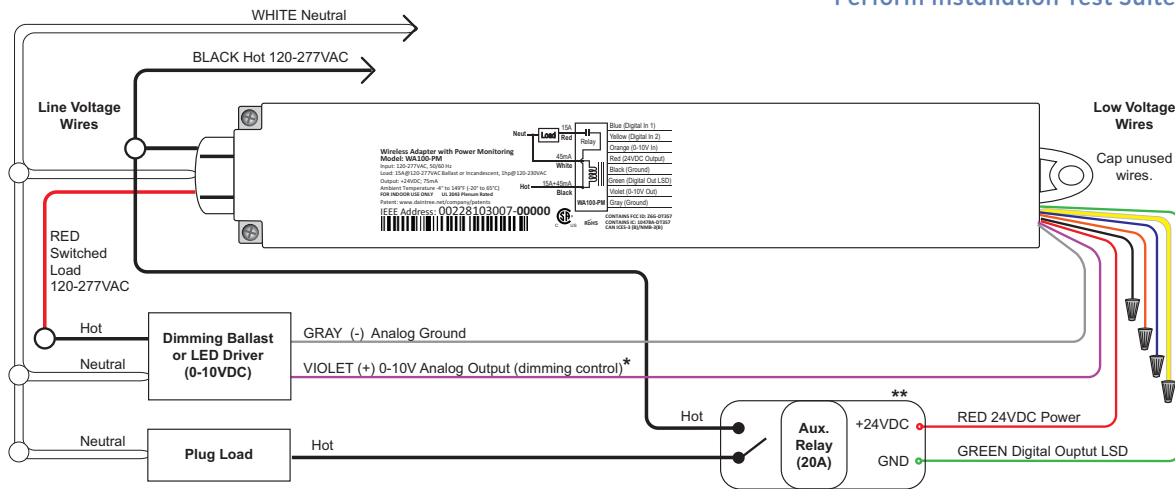
DIP Switches

 (# 2,3 ON)

Wired Sensor: None

OFF → ← ON

Perform Installation Test Suite 1



Wiring for Combination Plug Load (Basic Aux Relay) and On/Off Light

In the wiring diagram below, the WA100-PM is used to control both an On/Off light and a plug load circuit.

Driver: On/Off
Plug Load: On/Off

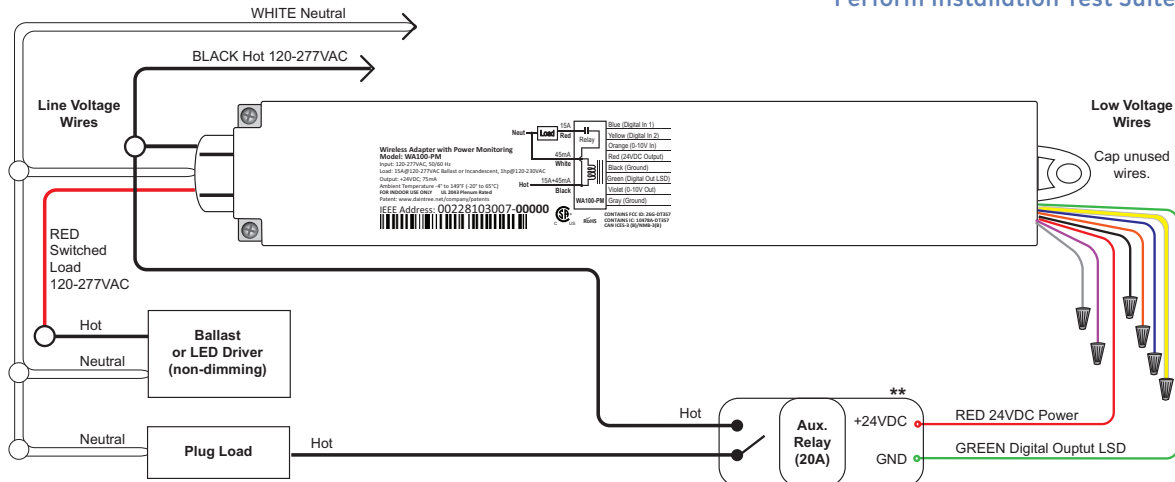
DIP Switches

 (# 2,4 ON)

Wired Sensor: None

OFF → ← ON

Perform Installation Test Suite 1



*0-10V Dimming output, 5 mA available, Up to 10 LED drivers or fluorescent ballasts typical; the chance of noise on the signal increases with more.
 **Relays used to control plug loads must be compliant with UL498 (Attachment Plug and Receptacles) or equivalent.



Plug Load Applications (WA100-PM)

Wiring for Combination Plug Load (Aux Relay with Input Control Signal) and Dimming Light

In the wiring diagram below, the WA100-PM is used to control both a dimming light and a plug load circuit.

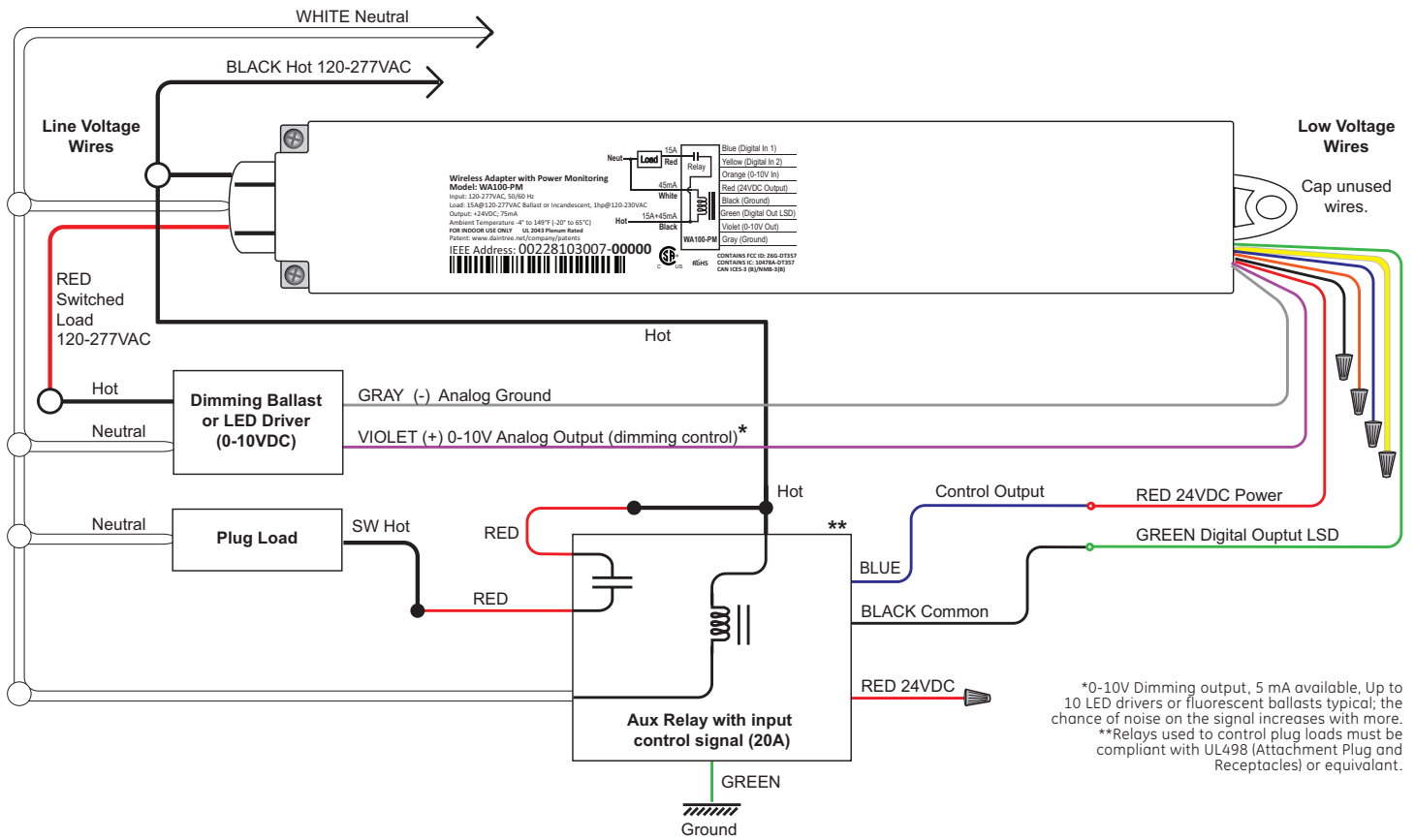
Driver: On/Off + 0-10V dimming
 Plug Load: On/Off

DIP Switches
 (# 2,3 ON)

Wired Sensor: None

OFF →  ← ON

Perform Installation Test Suite 1




Plug Load Applications (WA100-PM)


Wiring for Combination Plug Load (Aux Relay with Input Control Signal) and On/Off Light

In the wiring diagram below, the WA100-PM is used to control both an On/Off light and a plug load circuit.

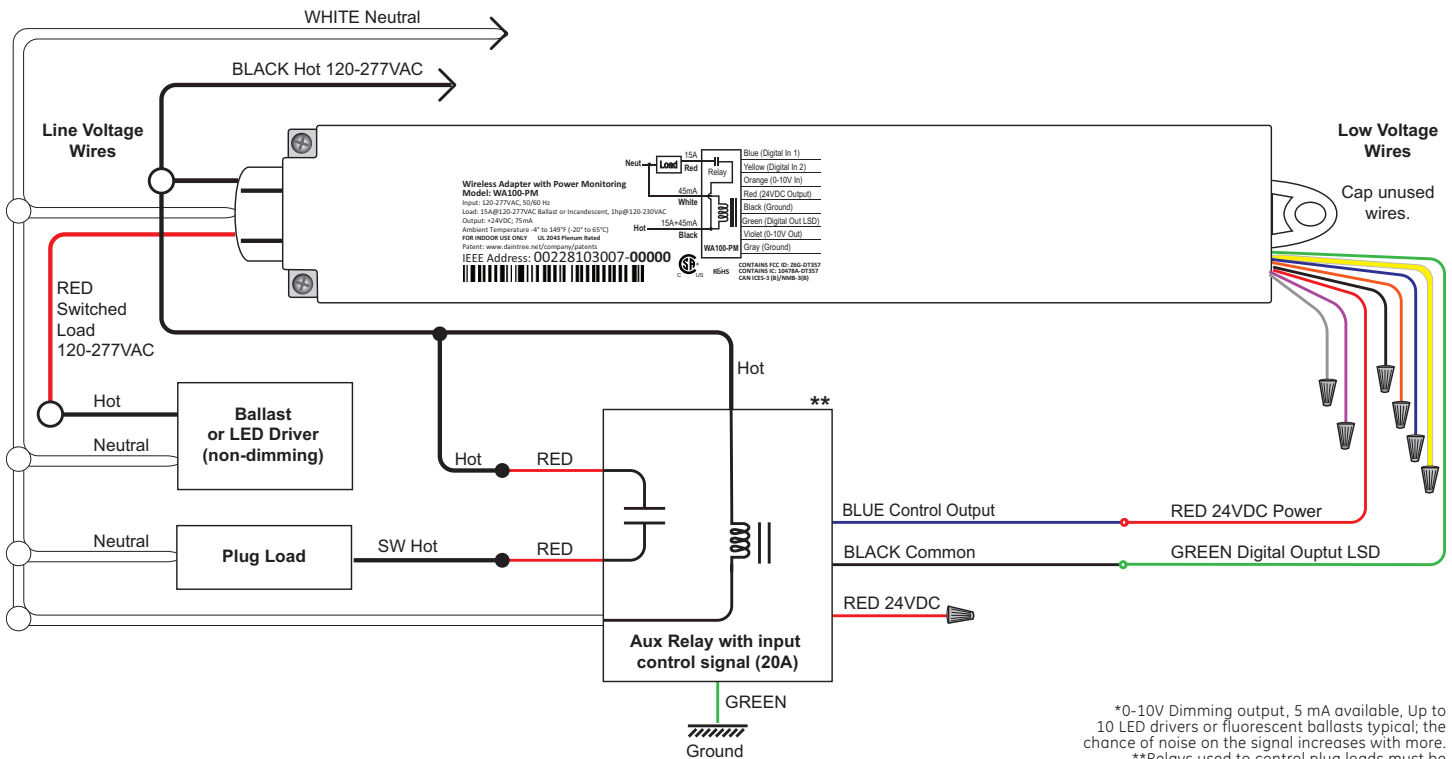
Driver: On/Off
Plug Load: On/Off

DIP Switches

 (# 2, 4 ON)

Wired Sensor: None

OFF →  ← ON

Perform Installation Test Suite 1



*0-10V Dimming output, 5 mA available. Up to 10 LED drivers or fluorescent ballasts typical; the chance of noise on the signal increases with more.
 **Relays used to control plug loads must be compliant with UL498 (Attachment Plug and Receptacles) or equivalent.

