

# PowPak® Installation

Dimming Module with PWM/0-10 V

Part of the Energi TriPak® Family

041434  
Rev. A  
01/2014

LMJ-5PWM-DV-B

120/277 V~ 50/60 Hz 5 A

PWM Control: 12 VDC 150 mA

0-10 VDC Control: 10 VDC 60 mA

### Important Notes: Please read before installing.

For installation by a qualified electrician in accordance with all local and national electrical codes.

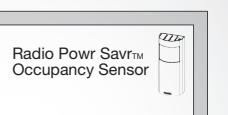
- **Note:** Use copper conductors only.
- Check to see that the device type and rating is suitable for the application.
- **DO NOT** install if product has any visible damage.
- If moisture or condensation is evident, allow the product to dry completely before installation.
- Operate between 0 °C and 40 °C ambient.
- 0% to 90% humidity, non-condensing.
- For indoor use only.

**WARNING** Shock Hazard. May result in serious injury or death. Turn off power at circuit breaker before installing the unit.

English

### PowPak® Dimming Module

Install in center of room to maximize RF coverage.



7 m max

10 m

12 m

All Wireless Transmitters must be installed within 7 m of the PowPak® Dimming Module.

## Default Functionality

### Occupancy Sensors

**Occupied:** All lights 100%.  
**Unoccupied:** All lights off.

### Daylight Sensor

All lights dim in response to daylight.

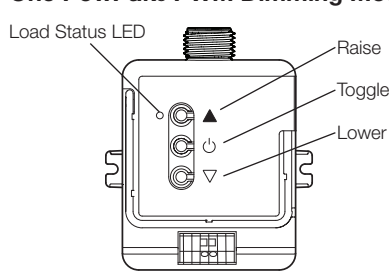
### Wireless Controls

On	All lights 100%
Favorite	All lights 50%
Off	All lights off

## Required Components

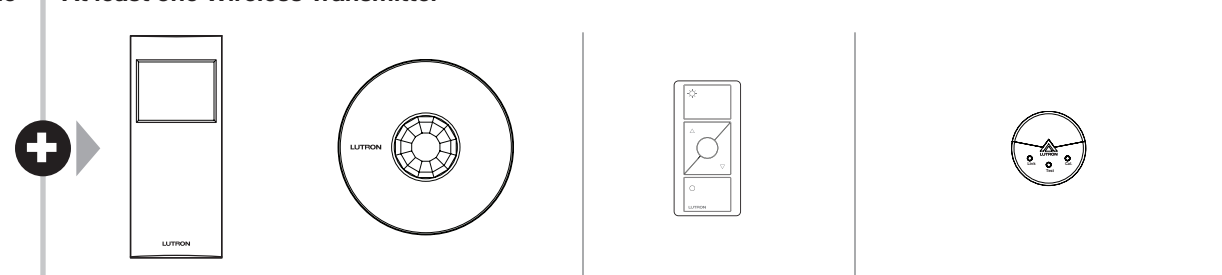
For each system, ensure that you have:

**One PowPak® PWM Dimming Module**



PowPak® Dimming Module with PWM/0-10 VDC (1 maximum)

**At least one Wireless Transmitter**



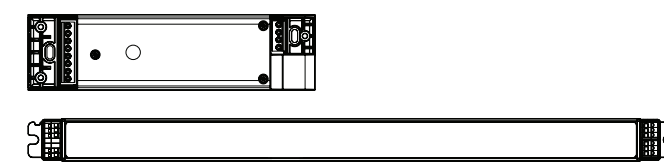
Radio Powr Savr™ Occupancy/Vacancy Sensor (6 maximum)

Pico® Wireless Control (9 maximum)

Radio Powr Savr™ Daylight Sensor (1 maximum)

**At least one PWM or 0-10 VDC Fluorescent Ballast or LED Driver**

Consult third-party fixture installation guide for fixture-specific wiring.



Switches up to 5 A total. May be pre-installed in light fixture. Control line current - PWM: 150 mA max; 0-10 VDC: 60 mA

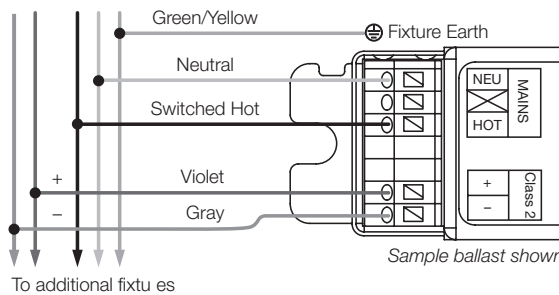
## Start Here

### 1 Mount, Wire, and Install PWM/0-10 VDC Devices and Lighting Fixtures

Consult third-party device installation guide

Turn off power at circuit breaker before installing unit.

- Connect mains wiring (switched hot, neutral) to each fixture.
- Connect low-voltage control (+ and -) to each fixture.



To additional fixtures

### 2 Install PowPak® Dimming Module

#### Suggested Installation Location:

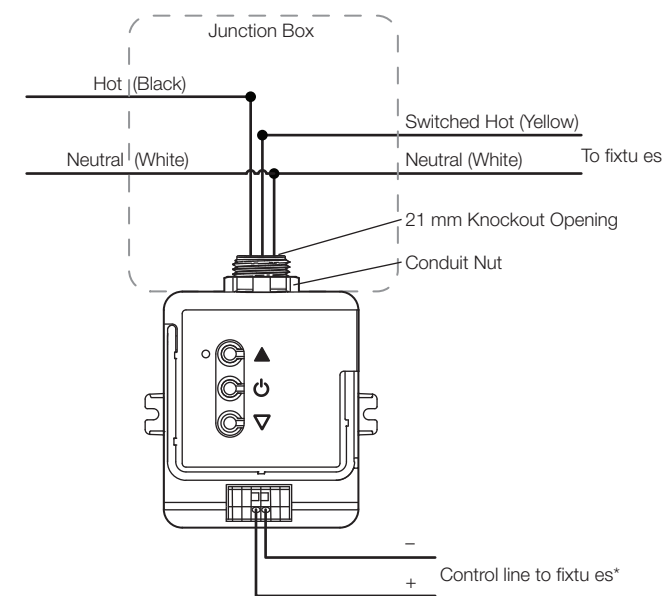
Install in center of room. This ensures proper RF coverage of area.

If installing unit inside a junction box please see Lutron P/N 369674.

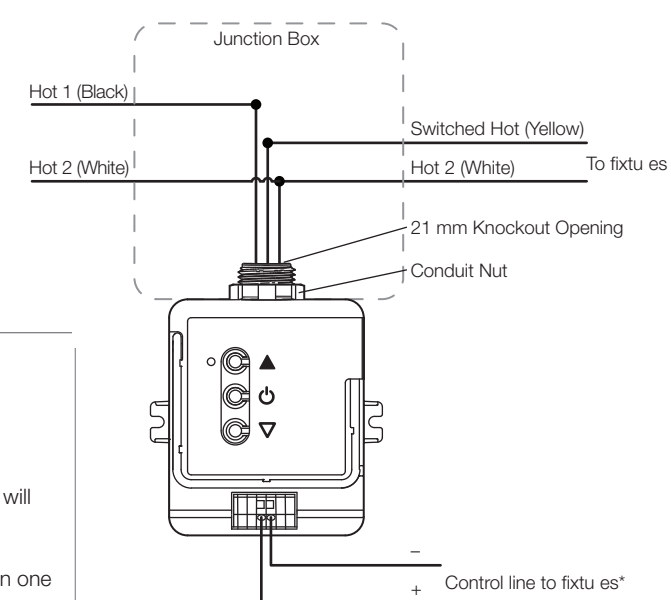
For more information: [www.lutron.com/powpakrelay](http://www.lutron.com/powpakrelay)

- PowPak® Dimming Module can be installed in a junction box or marshalling box using the conduit nut (provided) or with mounting screws (not provided). Please consult local and national electric codes for proper installation.
- Once installed, energize the PowPak® Dimming Module.
- Use the **Toggle** button "⓪" to toggle between high-end and OFF to verify ballast wiring.
- Use the **Raise** "▲" and **Lower** "▼" buttons to verify control wiring.

#### Wiring for 100 V~ applications:



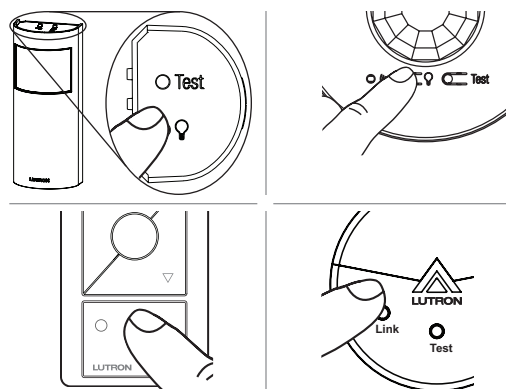
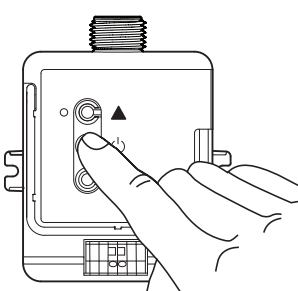
#### Wiring for 200 V~ applications: (requires a 2-pole input breaker)



### 3 Associate Wireless Transmitters to PowPak® Dimming Module

Before beginning this step, make sure that there are no other PowPak® modules being set up within the same building. It is possible that wireless transmitters from other systems can be incorrectly associated to this module.

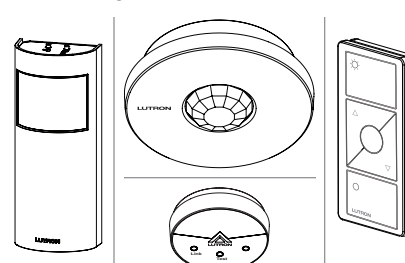
- On PowPak® Dimming Module, hold **Toggle** button "⓪" for 6 seconds until lights flash. The Load Status LED will begin flashing twice per second.
- Hold the indicated button on each transmitter for 6 seconds. Lights will flash to show that wireless transmitters have been associated.



- On PowPak® Dimming Module, hold **Toggle** button "⓪" for 6 seconds to save association. Lights will flash and LED will quickly blink for 2 seconds.

### 4 Install Wireless Transmitters

**Note:** Please consult individual component installation guides for information.



### 5 Calibrate Daylight Sensor

Daylight Sensor will control all wired fixtures equally.

- Set lights in room to desired light level.
- Press and hold "Cal." for 6 seconds.
- Exit room for 5 minutes to complete calibration.

**Note:** When calibration has completed, all lights will flash and begin daylighting.

#### Multiple Daylight Rows (OPTIONAL)

For every row of daylighting a separate PowPak® Dimming Module must be used. For detailed setup refer to the tuning section of the Radio Powr Savr™ Daylight Sensor installation guide.

- Select the PowPak® Dimming Module that you want to adjust by pressing the toggle button

#### Daylight Override

Pressing the raise button on an associated Pico® Wireless Control will temporarily override daylighting.

#### Daylight Re-Enable

Daylighting will be re-enabled when one of the following occurs:

- Two hours have passed since the override.\*
- ON, OFF, or Favorite button has been pressed on a Pico® Wireless Control.
- All associated Occupancy Sensors have reported unoccupied.
- \* Each time a daylighting override occurs, the two-hour timer is reset.

#### Supplied Terminal Information

Strip Length: 9 mm  
Torque: 2 N•m

## PowPak® Programming

### ALL PROGRAMMING IS OPTIONAL

Programming is not required for default functionality

- Set a favorite light level
  - Set high-end and low-end trim for all fixtures
  - Set occupancy levels
  - Set minimum light level for all fixtures
- Please consult individual component installation and programming guides for more details.

**FCC Information (LMJ- and ULMJ- only)**  
This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS (standards). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation. Modifications not expressly approved by Lutron Electronics Co., Inc. could void the user's authority to operate this equipment. NOTE: 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 can radiate 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:

- Re-orient 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.

### Limited Warranty

(Lutron Asuka Company, Ltd., will, at its option, repair or replace any unit that is defective in materials or manufacture within one year after purchase. For warranty service, return unit to place of purchase, or mail to Lutron Asuka Company, Ltd., No. 16 Kowa Building, 4F 1-9-20, Akasaka, Minato-ku Tokyo 107-0052 Japan, postage pre-paid, or telephone Lutron Asuka Company, Ltd., at 03.5575.8411.

This warranty is the sole express warranty, and the implied warranty of merchantability, as well as the implied warranty under the Japanese Civil Code (kashi-tampo), is limited to one year from purchase. This warranty does not cover the cost of installation, removal, or reinstallation, or damage resulting from misuse, abuse, or improper or incorrect repair, or damages from improper wiring or installation. This warranty does not cover incidental, consequential, or any special damages. Lutron Asuka Company's liability on any claim for damages arising out of or in connection with the manufacture, sale, installation, delivery, or use of the unit shall never exceed the purchase price of the unit.

Lutron, Pico, and PowPak are registered trademarks and Radio Powr Savr is a trademark of Lutron Electronics Co., Inc.

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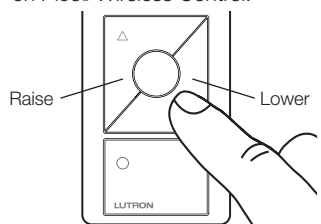
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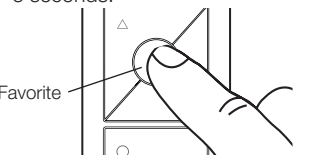
### 6 Set a Favorite Light Level

For Pico® Wireless Controls with a **Favorite** Button.

- Adjust lights to desired level: Use **Raise** button "▲" or **Lower** button "▼" on Pico® Wireless Control.



- Save favorite level: Press and hold **Favorite** button for 6 seconds.



### Reset Factory Defaults

**Note:** In some instances, it may be necessary to reset the PowPak® Dimming Module and connected devices back to factory default settings. Before beginning, make sure that all devices are connected and powered.

- Triple-tap any button on the PowPak® Dimming Module and hold until the LED begins to flash slowly; release button.
- Within 3 seconds of the start of flashing, triple-tap the same button again and the LEDs will flash rapidly indicating that the unit has been reset to factory defaults.

**Note:** Any associations or programming previously set up with the PowPak® will be erased and will need to be re-programmed.

### 7 Set Low-End and High-End Trim

#### Low-End Trim

- Enter low-end trim adjustment mode: Press and hold **Lower** button "▼" for 12 seconds. Lights will flash high-low-high and LED will begin flashing.

- Adjust the low-end trim: Use **Raise** button "▲" and **Lower** button "▼" to adjust and set the lights to the desired low-end (1 to 45%).

- Save the low-end trim: Press and hold **Toggle** button "⓪" for 6 seconds to save setting.

#### High-End Trim

- Enter high-end trim adjustment mode: Press and hold **Raise** button "▲" for 12 seconds.

- Adjust the high-end trim: Use **Raise** button "▲" and **Lower** button "▼" to adjust and set the lights to the desired high-end (55 to 100%).

- Save the high-end trim: Press and hold **Toggle** button "⓪" for 6 seconds to save setting.

- LED will begin flashing and then turn solid to indicate new level has been saved.

#### Notes

Depending on the fixture manufacturer or load, low-end and high-end trim may need to be adjusted.

- Trim low-end to ensure a stable light level because some loads will flicker or drop out if trimmed too low.
- Be sure that you can turn on the lights to the low-end trim level without any abnormal operation.
- The factory default high-end trim will normally be sufficient for most applications. Trim as desired.

### Troubleshooting

Ballasts cannot be controlled locally from PowPak® Dimming Module.	<ul style="list-style-type: none"> <li>• Ensure that the breaker(s) to the PowPak® Dimming Module are energized.</li> <li>• Ensure that the PowPak® Dimming Module switched hot lead is wired to the ballast(s).</li> <li>• Ensure that the PowPak® Dimming Module 0-10 V control lines are wired to the ballast(s).</li> <li>• Reset to factory defaults.</li> </ul>
Lights do not dim as expected.	<ul style="list-style-type: none"> <li>• Ensure that 0-10 V control lines are wired properly.</li> <li>• Ensure that fixture does not require an inverted signal (10-0 V control)</li> </ul>
Lights do not respond to Wireless Transmitter(s).	<ul style="list-style-type: none"> <li>• Ensure that the breaker(s) to the PowPak® Dimming Module and ballasts are energized.</li> <li>• Ensure that Wireless Transmitters are associated to the PowPak® Dimming Module.</li> <li>• Reset to factory defaults.</li> </ul>
Wireless Transmitter(s) cannot be associated to PowPak® Dimming Module.	<ul style="list-style-type: none"> <li>• The maximum number of Wireless Transmitters have been associated to the PowPak® Dimming Module. To remove a previously set up Wireless Transmitter, tap a Wireless Transmitter button three times; on the third tap hold for three seconds and then tap three more times.</li> </ul>

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