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PowPak Single Zone Control Module with EcoSystem

The PowPak Single Zone Control Module with EcoSystem is a radio frequency (RF) control that operates up to 32 EcoSystem LED drivers or fluorescent ballasts for the purpose of high performance dimming and control in a Vive system or with Vive standalone products. This control is based on input from Pico remote controls and Radio Powr Savr sensors. The control module is ideal for small areas (e.g., classrooms, conference rooms, private offices).

Communication with RF input devices (e.g., Pico remote controls, Radio Powr Savr sensors) is accomplished by using Lutron Clear Connect RF technology.

These products are also compatible with the Vive hub which enables a simple setup process using the free Lutron Vive app (available for download from the App Store or Google Play® online marketplace) or by using web-based software with any Wi-Fi® enabled iOS® or Android® compatible device. It also enables control and monitoring of all Vive devices. The Vive hub can be added at any time. System reprogramming will be required. For a complete list of features supported with the Vive hub, see specification submittal 369902.
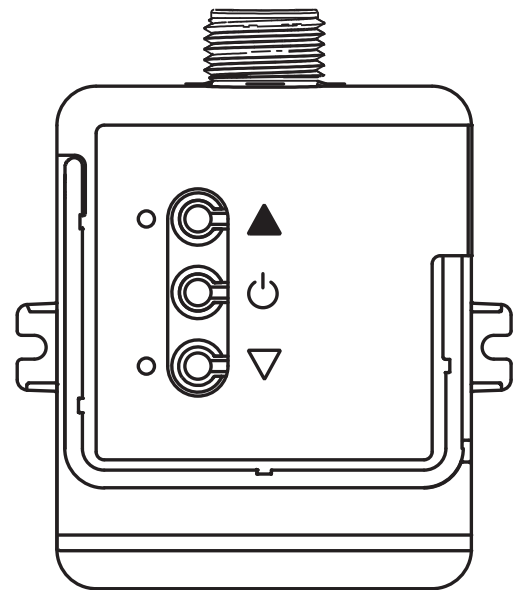
Features

- Compatible with any Lutron EcoSystem LED driver or ballast for high performance dimming and control.
- Controls up to 32 EcoSystem fixtures in a single zone.
  – All fixtures will be at the same light level and cannot be individually controlled
- Configurable high- and low-end trim.
- Receives wireless inputs from up to 10 Pico remote controls, 10 Radio Powr Savr occupancy/vacancy sensors, and 1 Radio Powr Savr daylight sensor.

- Utilizes Lutron Clear Connect RF Technology; refer to model number chart below for frequency band data.
- Mounts to a 4 in x 4 in (102 mm x 102 mm) square junction box through a 0.5 in (20 mm) knockout.

Models

Model Number	Description	Region	Operating Voltage	Frequency Band
RMJS-ECO32-SZ	32 device controller	U.S.A., Canada, Mexico	120–277 V∼	431.0–437.0 MHz
		Israel, Hong Kong	220–240 V∼	433.05–434.79 MHz

Note: Contact Lutron for frequency band compatibility for your geographic region if it is not indicated above.

Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals

- UL Listed
- FCC approved. Complies with the limits for a Class B device, pursuant to Part 15 of the FCC rules
- DALI-2 Certified (IEC 62386)
- cUL and IC
- NOM
- UL 2043 Plenum Rated
- Classified in accordance with CAN/ULC-S142 as discrete product certified for installation in an air-handling space.
- Compatible with DALI-compliant loads

Power

- 120–277 V∼ 50/60 Hz, max. current 80 mA

Other Power Specifications

- Standby power:
  120–277 V∼ <1.0 W

System Communication

- Operates using Clear Connect RF Technology for reliable wireless communication
- Wireless sensors and controls must be located within 30 ft (9 m) of the associated control module.

Key Design Features

- LED status indicator shows load status and provides programming feedback
- Configurable high-end and low-end trim
- Power failure memory: If power is interrupted, connected loads will return to the previous level prior to interruption

Environment

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

Mounting

- This device can be installed on a junction box or marshalling box using the conduit nut or with mounting screws and must be installed away from a fixture/troffer. The device must NOT be mounted inside or on a fixture/troffer or other metallic enclosure.
- For applications where code requires the PowPak Control Module to be installed inside an additional junction box (e.g., U.S.A.), please see Lutron Application Note #423 (P/N 048423) at www.lutron.com. For all other installations, refer to the installation instructions and consult local and national electric codes for proper installation.
- The PowPak Control Module needs to be accessible for some programming steps. Record where it is mounted so that it can be easily located later.

> NOTICE: Improper installation can result in degraded wireless communication and/or intermittent or sustained communication failures, and will not be covered under warranty.

Metal Ceiling Mounting

- Metal ceiling grids must have a ≥ 0.12 in (3 mm) gap of non-metal material which extends the entire length of the tile on at least one edge. This is often achieved by foam spacers that are used to prevent tile-to-tile rattling.
- Metal ceiling grids which are continuous (with no gap) or those that are interlocked, must have a total surface area that is less than 900 ft^2 (81 m^2) for each section. The overall space can be larger as long as there are non-metal sections bordering or intersecting the metal sections.

Job Name:	Model Numbers:
Job Number:	

Specifications (continued)

EcoSystem/DALI Link

- 18 V⎓
- Guaranteed Supply Current: 64 mA
- Maximum Supply Current: 250 mA
- Connects to Lutron EcoSystem LED drivers or ballasts
  - Controls up to 32 EcoSystem drivers or ballasts
  - Multiple drivers/ballasts connected to a Control Module will always work together as a single zone
- Can be wired as Class 1 or IEC PELV/NEC® Class 2. For more details, see Lutron Application Note #142 (P/N 048162) at www.lutron.com
- Polarity free
- Topology free
- The PowPak Control Module is a single master controller and therefore no other controllers may exist on the same link.
- Ensure that there is no greater than a 2 V∿ drop between the Control Module and the end of the link.

  Note: Wired sensors connected to EcoSystem devices are NOT supported.

Wire Gauge	Total Digital Link Wire Length	
	EcoSystem	DALI
12 AWG (4.0 mm^2)	2200 ft (671 m)	984 ft (300 m)*
14 AWG (2.5 mm^2)	1400 ft (427 m)	984 ft (300 m)*
16 AWG (1.5 mm^2)	900 ft (275 m)	900 ft (275 m)
18 AWG (1.0 mm^2)	570 ft (175 m)	570 ft (175 m)

Lutron Qualified DALI Control Gear

- Lutron requires that all DALI devices that are intended to be used with a Lutron controller must be pre-tested by Lutron and determined to be compatible before being used on a project.
- For a complete list of Lutron qualified DALI ballasts please refer to Application Note #482 (P/N 048482) at www.lutron.com

Default Operation

- Associated wireless input devices control all connected fixtures together
- Occupancy Sensors:
  - Occupied: 100%; Unoccupied: 0% (OFF)
- Pico Remote Controls:
  - On: 100%; Favorite Level: 50%; Off: 0% (OFF)
- Daylight Sensor: Decreases electric light in response to additional available daylight

* Maximum recommended length as per IEC 62386-101 Ed. 2.0

Job Name:	Model Numbers:
Job Number:	

Advanced Configurations

Pico Remote Controls
- Up to 10 Pico remote controls
- Favorite levels can be set for each Pico remote control

Radio Powr Savr Daylight Sensor
- The Radio Powr Savr daylight sensor will affect all connected LED drivers and ballasts equally
- For multiple rows of daylighting, a separate PowPak Control Module must be used for each daylighting row

Minimum Light Level Setting (optional)
- Certain applications, such as hallways, may require that the lights never turn off. For these areas, select the minimum light level option and the load will lower to programed low-end level. Default operation lowers to OFF.

High- and Low-End Trim
- High-end and low-end trim affect all connected fixtures equally, and can be configured from the PowPak Control Module.
- Adjustable low-end trim (0.1%–45%)*. Trimmable low-end can ensure a stable light level. Some fixtures will flicker or drop out if trimmed too low.
- The maximum light output of connected fixtures can be decreased down to 55% for energy savings in over-lit spaces.
  Note: The perceived light output of low-end trim may vary between fixture manufacturers and model numbers. For best results, do not mix different drivers or ballasts on the same EcoSystem circuit.
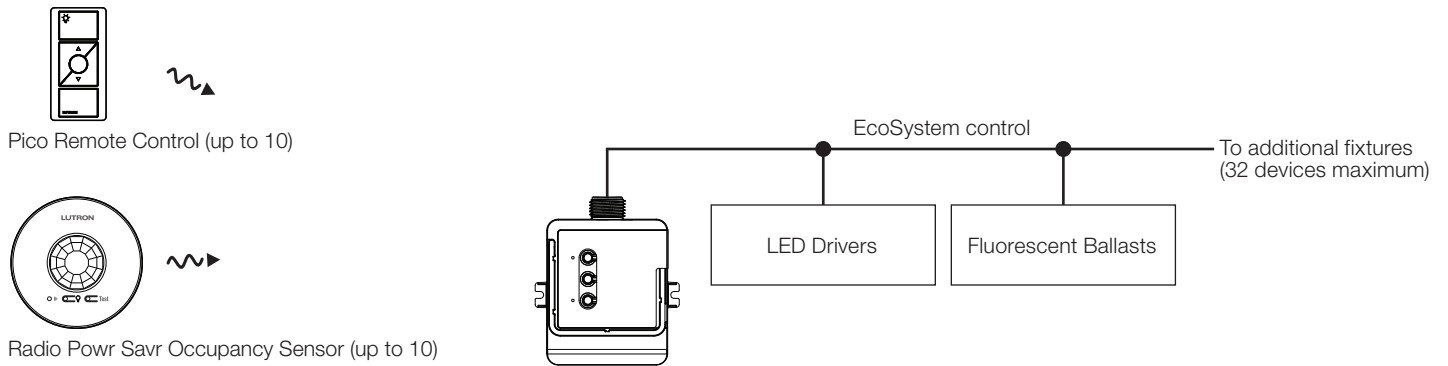
Radio Powr Savr Occupancy Sensors
- Radio Powr Savr occupancy and vacancy sensors control all connected drivers or ballasts.
- Pico remote controls can be used to adjust the occupied levels of fixtures that they control from 0.1%* to 100% (of output signal) or can make them unaffected by occupancy events.
- Vacancy events (area becomes unoccupied) turn all driver or ballast models off or to minimum light level.

* Low-end depends on the minimum output of the connected drivers or ballasts.

System Diagram

Pico Remote Control (up to 10)

Radio Powr Savr Occupancy Sensor (up to 10)

Radio Powr Savr Daylight Sensor (up to 1)

EcoSystem control

To additional fixtures
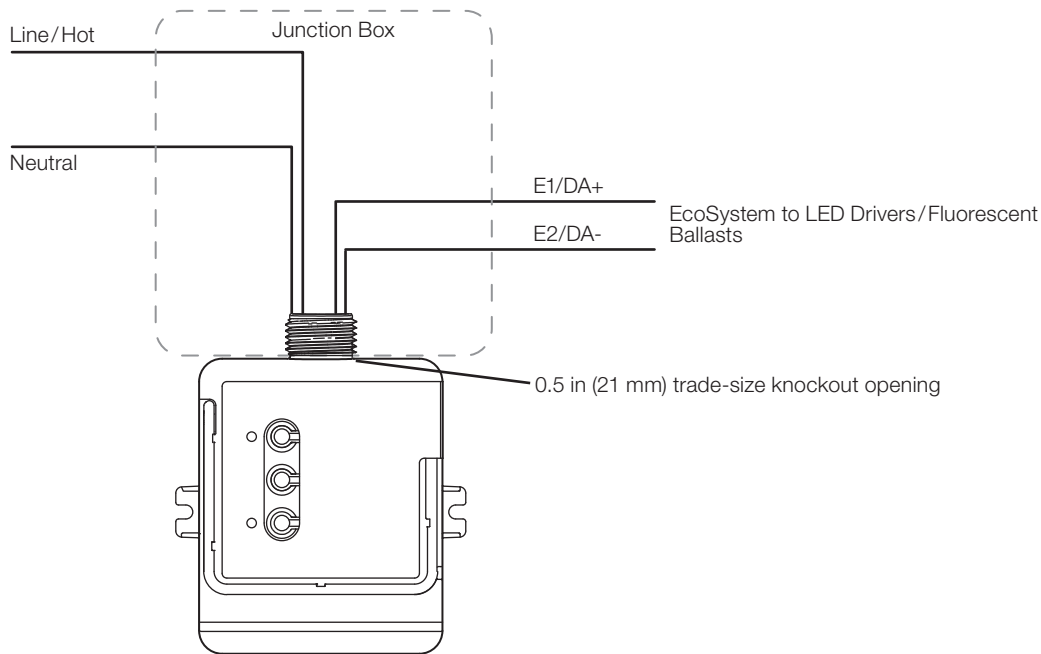(32 devices maximum)

LED Drivers

Fluorescent Ballasts

Note: Multiple drivers / ballasts connected to a PowPak Control Module will always work together as a single zone.

Note: The perceived light output of low-end trim may vary between fixture manufacturers and model numbers. For best results, do not mix different drivers or ballasts on the same EcoSystem circuit.
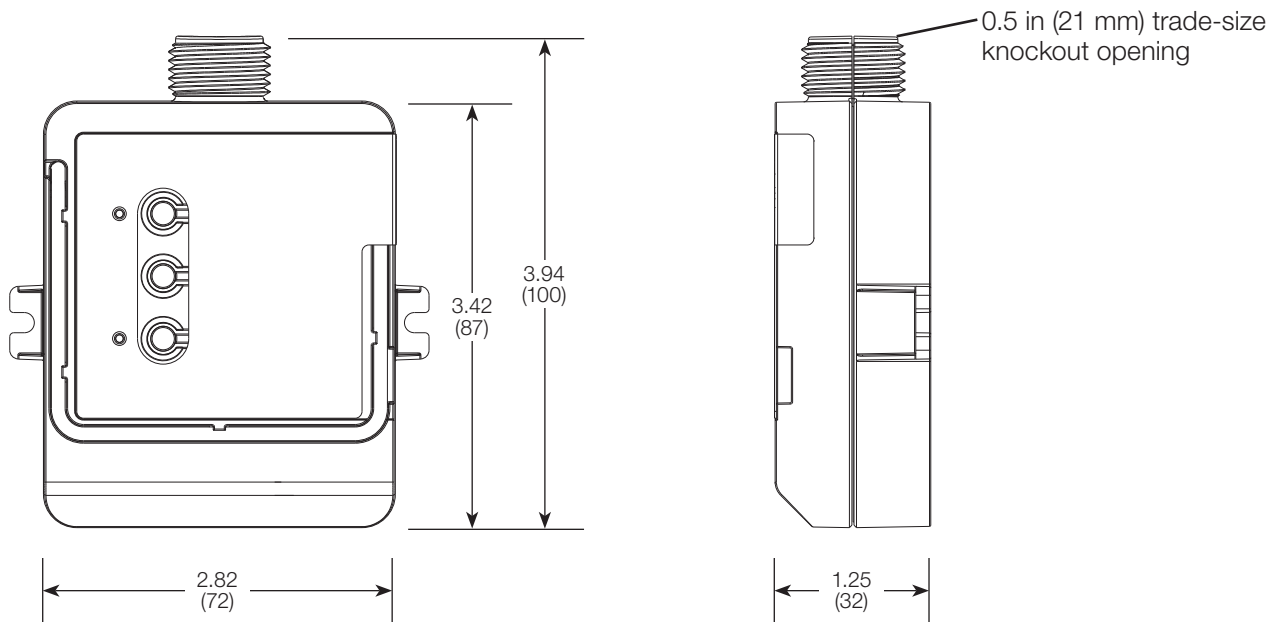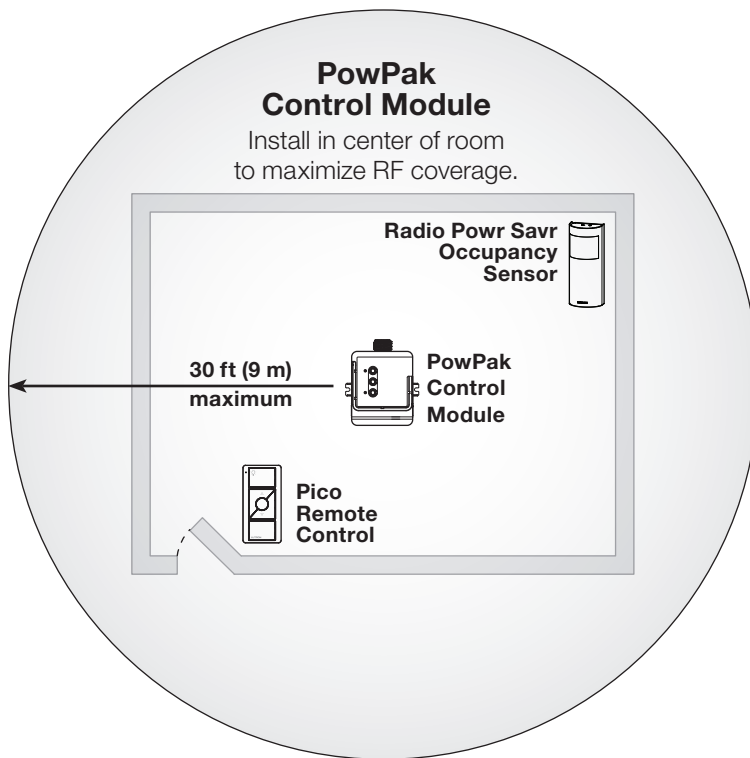
Wiring Schematic

Line / Hot

Junction Box

Neutral

E1/DA+

E2/DA-

EcoSystem to LED Drivers / Fluorescent Ballasts

0.5 in (21 mm) trade-size knockout opening

Job Name:	Model Numbers:
Job Number:	

Dimensions

Dimensions are shown as: in (mm)

0.5 in (21 mm) trade-size knockout opening

3.94 (100)

3.42 (87)

2.82 (72)

1.25 (32)

Wireless Range Diagram

PowPak Control Module

Install in center of room to maximize RF coverage.

Radio Powr Savr Occupancy Sensor

30 ft (9 m) maximum

PowPak Control Module

Pico Remote Control

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- Metal ceiling grids which are continuous (with no gap) or those that are interlocked, must have a total surface area that is less than 900 ft^2 (81 m^2) for each section. The overall space can be larger as long as there are non-metal sections bordering or intersecting the metal sections.

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Job Name:	Model Numbers:
Job Number:	