PowPak® Dimming Module with 0–10 V Control

The PowPak® Dimming Module with 0–10 V Control is a radio frequency (RF) control that operates 0–10 V controlled fluorescent ballasts or LED drivers based on input from Pico® wireless controls and Radio Powr Savr™ sensors. The Dimming Module with 0–10 V Control is ideal for small areas (e.g., classrooms, conference rooms, private offices).

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

Features

- Controls up to 60 mA of 0–10 V controlled fixtures together
- Switches up to 5 A total
- 0–10 V control link automatically sources or sinks to the third party fixtures
- Configurable high- and low-end trim
- Various operating voltages available; refer to model number chart below for details on voltage requirements
- Receives input from up to nine Pico® wireless controls, six Radio Powr Savr™ occupancy/vacancy sensors, and one Radio Powr Savr™ daylight sensor
- Utilizes Lutron® Clear Connect® RF Technology; refer to model number chart below for frequency band data
- Mounts to a US-style junction box through a standard-size knockout
- Complies with requirements for use in a compartment handling environmental air (plenum) per NEC® 2011 300.22(C)(3) (RMJ- and URMJ-)

Models Available

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Region</th>
<th>Operating Voltage</th>
<th>Frequency Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMJ-5T-DV-B</td>
<td>U.S.A., Canada, Mexico</td>
<td>120–277 V~</td>
<td>431.0–437.0 MHz</td>
</tr>
<tr>
<td>URMJ-5T-DV-B</td>
<td>U.S.A. (BAA Compliant)</td>
<td>120–277 V~</td>
<td>431.0–437.0 MHz</td>
</tr>
<tr>
<td>RMQ-5T-DV-B</td>
<td>Hong Kong</td>
<td>220–240 V~</td>
<td>433.05–434.79 MHz</td>
</tr>
<tr>
<td>RMM-5T-DV-B</td>
<td>China, Singapore</td>
<td>220–240 V~</td>
<td>868.125–868.475 MHz</td>
</tr>
<tr>
<td>RMN-5T-DV-B</td>
<td>India</td>
<td>220–240 V~</td>
<td>865.5–866.5 MHz</td>
</tr>
<tr>
<td>RMP-5T-JA-B</td>
<td>Japan</td>
<td>100–200 V~</td>
<td>313.3–314.8 MHz</td>
</tr>
</tbody>
</table>

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

Regulatory Approvals

RMJ- and URMJ- models only
- UL Listed
- UL 2043 Plenum-Rated
- FCC approved. Complies with the limits for a Class B device, pursuant to Part 15 of the FCC rules
- CSA and IC (Canada)
- COFETEL (Mexico)
- NOM (Mexico)
- RMN- model
- WPC Type Approved (India)
- RMK- model
- CE (European Union)
- TRA Type Approved (United Arab Emirates)
- RMP- model
- PSE certified (Japan)

Power
- Operating voltage
  - RMJ-, URMJ- models: 120–277 V~ 50/60 Hz
  - RMQ- model: 220–240 V~ 50/60 Hz
  - RMM- model: 220–240 V~ 50/60 Hz
  - RMK- model: 220–240 V~ 50/60 Hz
  - RMN- model: 220–240 V~ 50/60 Hz
  - RMP- model: 100–200 V~ 50/60 Hz

Output Ratings
- Switch rating of 5 AX. Rated for resistive or capacitive loads as defined by IEC/EN 60669-2-1
- 0–10 V control link for 60 mA maximum output, source or sink automatically configures

Other Power Specifications
- Standby power:
  - 240–277 V~ 610 mW
  - 120 V~ 550 mW
- BTU/hour when fully loaded: 9

System Communication
- Operates using Clear Connect® RF Technology for reliable wireless communication; refer to model number chart on page 1 for frequency band details
- RF range is 30 ft (9 m)

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

0–10 V Control Link
- Communicates with up to 60 mA of fixtures
- Control link is IEC SELV/NEC® Class 2
- 0–10 V control can be installed using NEC® Class 1 or Class 2 wiring methods. Alternately, it can be wired to basic or double-insulated devices
- Terminals accept one 18 to 16 AWG (0.75 to 1.5 mm²) solid wire
- Always consult local wiring codes

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

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
- 0–10 V control miswire protection up to 30 V
- Programming lockout can be enabled for public spaces
- 0–10 V control can be programmed to be inverted for 10–0 V control
- Daylight override: Pressing the raise button on an associated Pico® wireless control will temporarily override daylighting for all fixtures wired to the PowPak® Dimming Module with 0–10 V control
  - Daylighting will be re-enabled for all the fixtures wired to the PowPak® Dimming Module with 0–10 V control when one of the following occurs:
    - Two hours have passed since the override.*
    - ON, OFF or Preset button has been pressed on a Pico® wireless device controlling the fixtures wired to the PowPak® Dimming Module with 0–10 V control.
    - All associated Occupancy Sensors have reported unoccupied.
  * Each time a daylighting override occurs for any control associated to the PowPak® Dimming Module with 0–10 V control, the two-hour timer is reset.

Advanced Configurations

Pico® Wireless Controls
- Up to nine Pico® wireless controls
- Favorite levels can be set for each Pico® wireless control

Radio Powr Savr™ Daylight Sensor
- The Radio Powr Savr™ daylight sensor will affect all connected ballast and LED drivers equally

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 programmed 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® Dimming Module or from any associated Pico® wireless control when unit is not in programming lock-out mode
- Adjustable low-end trim (0–45%). Trimmed 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 ballasts or drivers on the same 0–10 V circuit.

Radio Powr Savr™ Occupancy Sensors
- Radio Powr Savr™ occupancy and vacancy sensors control all connected ballasts or drivers
- Pico® wireless controls can be used to adjust the Occupied levels of fixtures that they control from 1% to 100% or can make them unaffected by Occupancy events
- Vacancy events (area becomes unoccupied) turn all ballasts and driver models off or to minimum light level

Programming Lockout
- Once enabled, all Pico® wireless controls can no longer perform programming or set favorite levels
- To change settings, programming lockout must be unlocked by a button combination directly on the PowPak® Dimming Module.
System Diagram (RMJ-, URMJ-, RMQ-, and RMM- models)

Wiring Schematic (RMJ-, URMJ-, RMQ-, and RMM- models)

NOTE:
Some applications (in the USA) require the PowPak® module to be installed inside an additional junction box. For information about how to perform this installation, visit www.lutron.com, Application Note #423 (P/N 048423). Please consult all local and national electric codes for proper installation methods.
System Diagram (RMP- models)

Wiring Schematic (RMP- models)

100 V~

200 V~
System Diagram (RMK- and RMN- models)

![System Diagram Image]

Wiring Schematic (RMK- and RMN- models)

![Wiring Schematic Image]

* NOTE:
RMK- model PowPak® module can be installed in a junction box or marshalling box. Please consult all local and national electric codes for proper installation methods.
Dimensions

Dimensions are shown as: in (mm)

![Diagram showing dimensions of PowPak® Dimming Module and Energi TriPak® Series Wireless Lighting Control]

Range Diagram

All wireless transmitters must be installed within 30 ft (9 m) of the PowPak® Dimming Module.

Contact Lutron first for applications using foil-backed or metallic ceiling tiles.