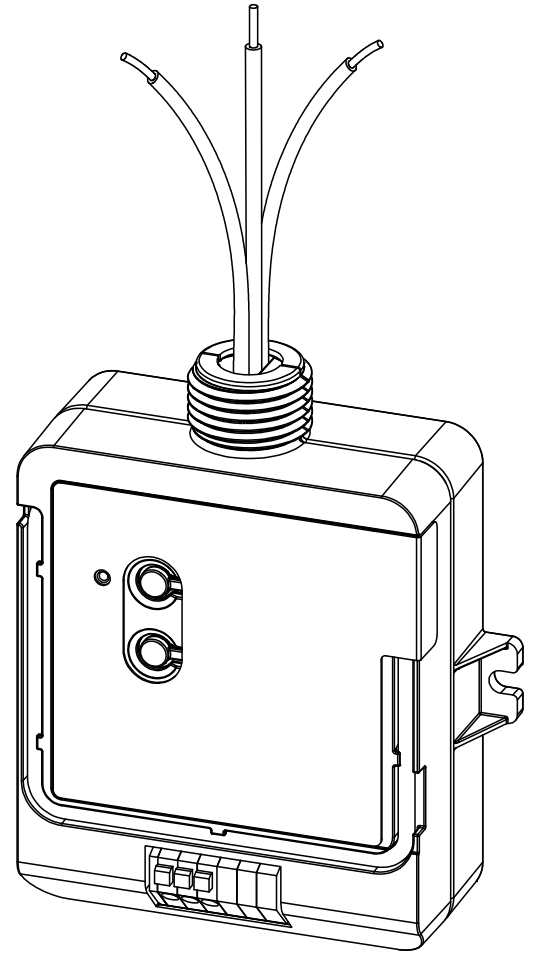# PowPak™ Relay Module with SoftSwitch®

The PowPak™ Relay Module with SoftSwitch® is a radio frequency (RF) device that uses Lutron patented SoftSwitch® technology to control up to 16 A of general-purpose load based on input from Pico® controls and Radio Powr Savr™ occupancy and daylight sensors. An optional, low-voltage dry contact closure output is available to communicate occupancy status to 3rd-party systems such as HVAC controllers.

Communication with RF input devices, such as Pico® controls and Radio Powr Savr™ sensors, is accomplished using Lutron Clear Connect™ RF Technology.

Features

- SoftSwitch®: Lutron patented technology prevents arcing of relay contacts, extending product lifetime
- Various operating voltages available — refer to model number chart below for details on voltage requirements
- Capable of switching 16 A of general-purpose loads
- Optional low-voltage dry contact closure output provides integration to building management systems, HVAC, VAV, etc.
- Receives wireless inputs from up to nine Pico® 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 junction box through a standard half-inch (NPT trade size) knockout
- Complies with requirements for use in a compartment handling environmental air (plenum) per NEC® 2011 300.22(C)(3)

Description	Model Number	Operating Voltage	Frequency Band	Region
PowPak™ Relay Module with SoftSwitch®	RMJ-16R-DV-B	120 / 277 V∼	431.0 – 437.0 MHz	U.S.A., Canada, Mexico
	RMQ-16R-DV-B	220-240 V∼	433.05 – 434.79 MHz	Hong Kong
PowPak™ Relay Module with SoftSwitch® and Occupancy-Status CCO	RMJ-16RCCO1-DV-B	120 / 277 V∼	431.0 – 437.0 MHz	U.S.A., Canada, Mexico
	RMQ-16RCCO1-DV-B	220-240 V∼	433.05 – 434.79 MHz	Hong Kong

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

RMJ- 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
- COFETEL
- NOM (expected Q1 2012)

Power
- Operating voltage:
  RMJ- models 120/277 V∼ 50/60 Hz
  RMQ- models 220-240 V∼ 50/60 Hz

System Communication
- Operates using Clear Connect™ RF Technology for reliable wireless communication; refer to model number chart on page 1 for band frequency details
- RF range is 30 ft (10 m)

Environment
- Ambient operating temperature: 32 °F to 131 °F (0 °C to 55 °C)
- 0% to 90% humidity, non-condensing
- For indoor use only

SoftSwitch®
- Patented SoftSwitch® circuit eliminates relay arcing at mechanical contacts
- Extends relay life to an average of 1 million cycles
- Output is non-latching

Load
- Maximum load: 16 A general purpose. No minimum load requirements.
- Load types include (but are not limited to): Incandescent, MLV, ELV, Resistive, Inductive, Magnetic fluorescent, Electronic fluorescent
- Motor rating:
  RMJ- models 0.5 HP (120 V∼), 1.5 HP (277 V∼)
  RMQ- models 1.5 HP (220-240 V∼)
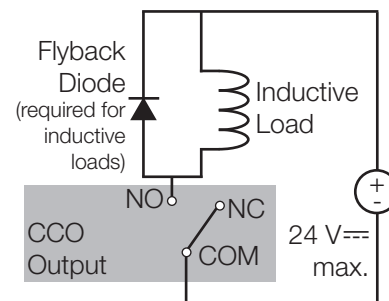
Key Design Features
- LED status indicator shows current load status and provides programming feedback
- Power failure memory: If power is interrupted, connected loads will return to the previous level prior to interruption
- Daylighting can be overridden by pressing the ON button on any associated Pico®
  – Daylighting will be re-enabled after 2 hours or after the area becomes unoccupied

Contact Closure Output (CCO version only)
- Provides occupancy status to 3rd-party equipment such as building management systems, HVAC, and VAV controllers
- Provides both normally open (NO) and normally closed (NC) dry contacts
- Maintained output type
- CCO terminals accept 20 to 16 AWG (0.5 to 1.5 mm^2) solid or stranded wire
- Output is latching
- Not for voltages greater than 24 V

Switching Voltage	Resistive Load ◣
0-24 V⎓	1.0 A
0-24 V∼	0.5 A

- The CCO is not rated to control unclamped, inductive loads. Inductive loads include, but are not limited to, relays, solenoids, and motors. To control these types of equipment, a flyback diode must be used (DC voltages only). See diagram below. For more information, please see Application Note # 434 (p/n 048434).
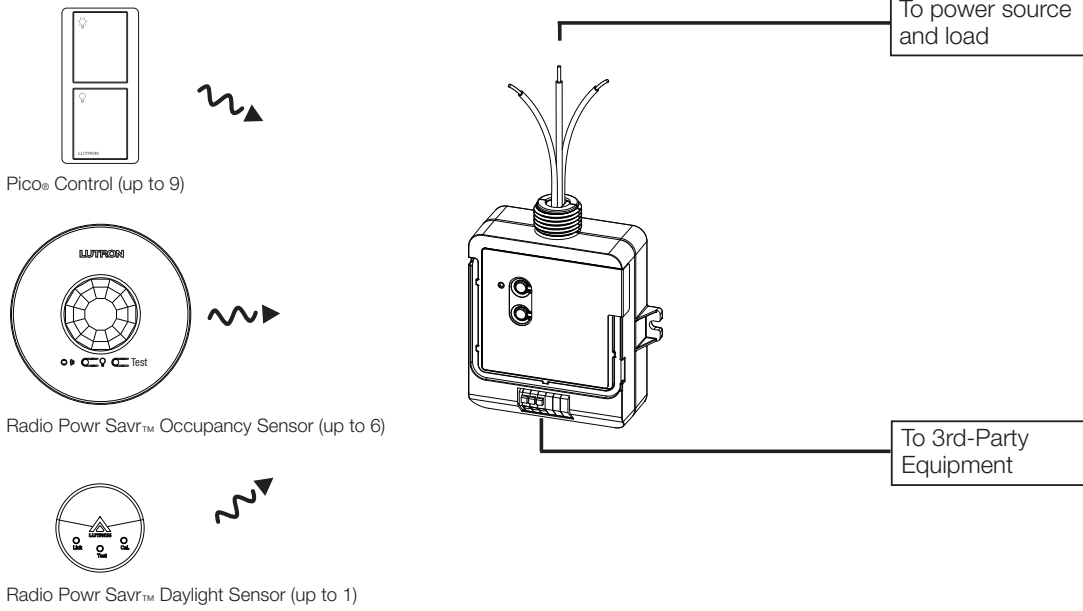
Job Name:	Model Numbers:
Job Number:	

System Diagram

Pico® Control (up to 9)

Radio Powr Savr™ Occupancy Sensor (up to 6)

Radio Powr Savr™ Daylight Sensor (up to 1)

To power source
and load

To 3rd-Party
Equipment

Wiring Diagram

Junction Box

HOT

NEUTRAL

White

Black

SWITCHED HOT

Red

LOAD

Occupancy-Status CCO
(RM__-16RCCO1-DV-B only)

NC

NO

COM

To 3rd-Party
Equipment
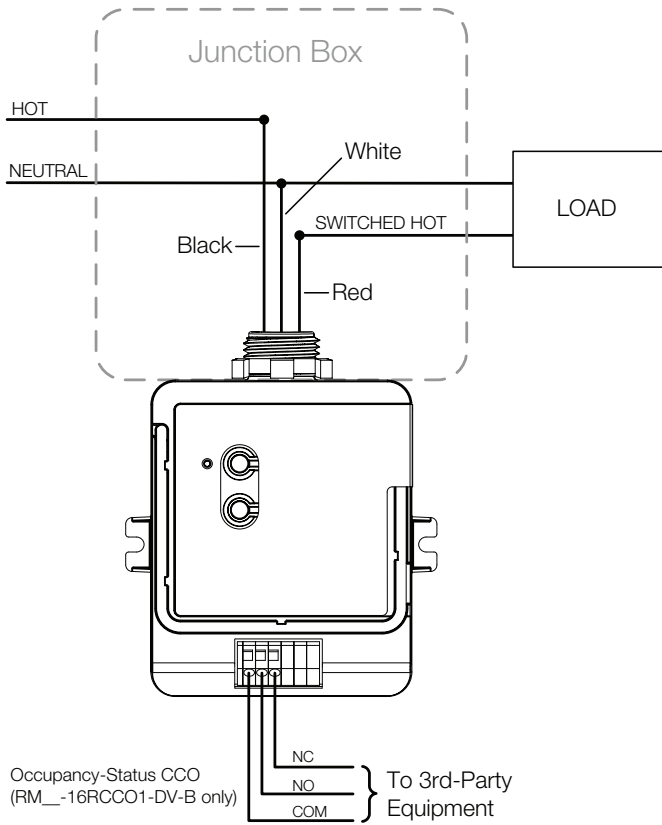
Job Name:	Model Numbers:
Job Number:	

Wiring Diagram

Input Voltage

White
(Neutral)

Red
(Switched Hot)

Black
(Hot)

To Load

Conduit Nut

COM
(Common)

NO
(Normally Open)

NC
(Normally Closed)

To 3rd Party Equipment

Note: When wiring CCO to 3rd-party systems, use 20 to 16 AWG (0.5 to 1.5 mm²) solid or stranded wire.
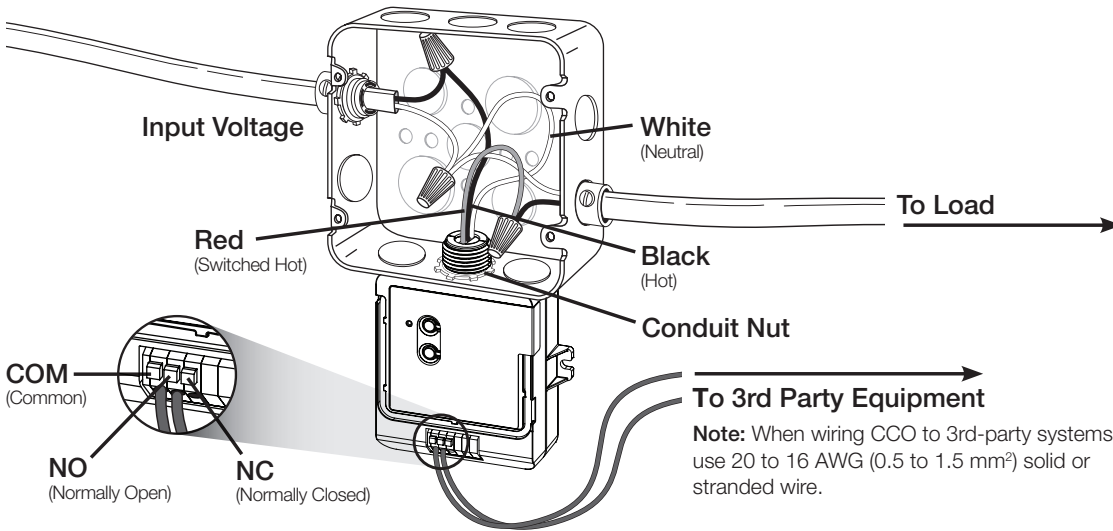
CCO operation affected only by associated occupancy or vacancy sensors.
Room Occupied: NO = Close   NC = Open
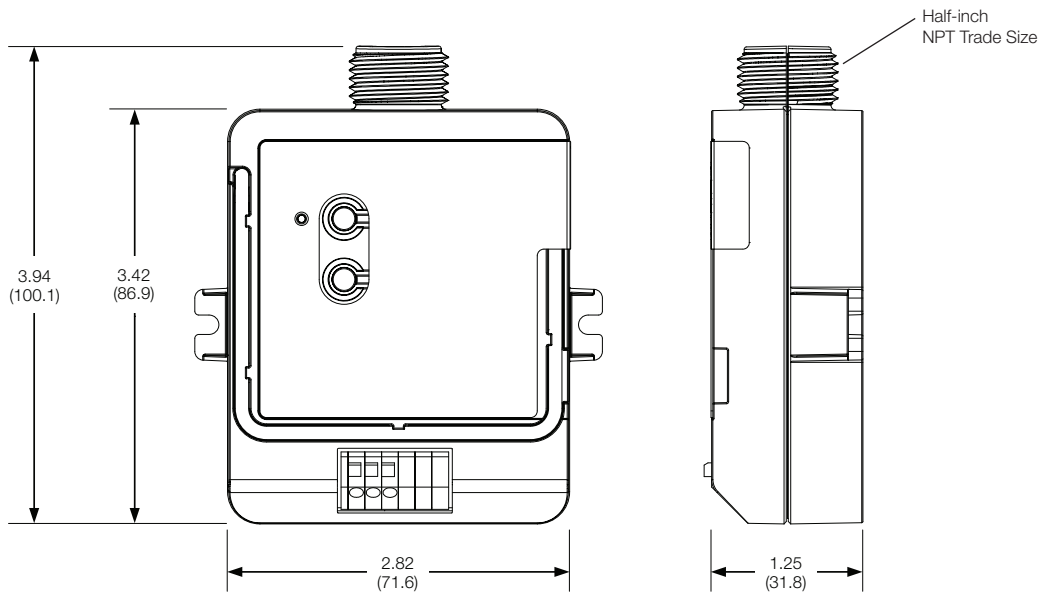**Room Unoccupied:** NO = Open   NC = Close

In some applications, a PowPak™ module can be installed inside a 4 in x 4 in (102 mm x 102 mm) junction box. For information about how to perform this installation, please see Application Note #423 (p/n 048423).
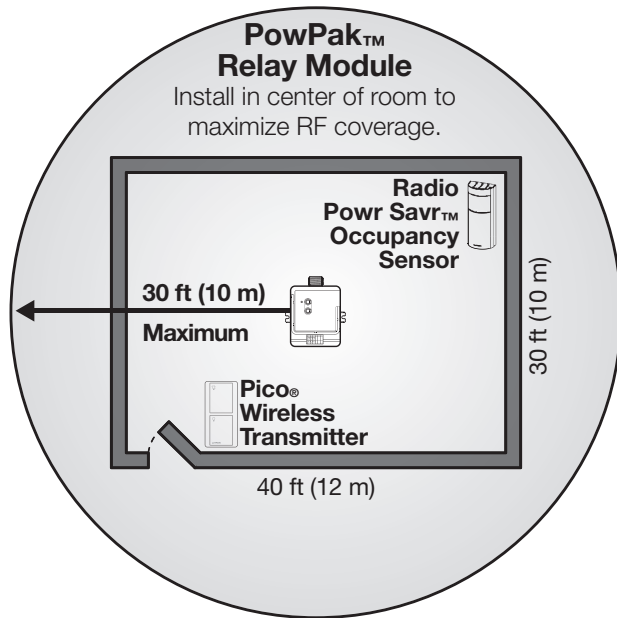
BOX A

Antenna

BOX B

PowPak™ Installation Inside Junction Box
(Dimming Module RMJ-ECO32-DV-B shown)
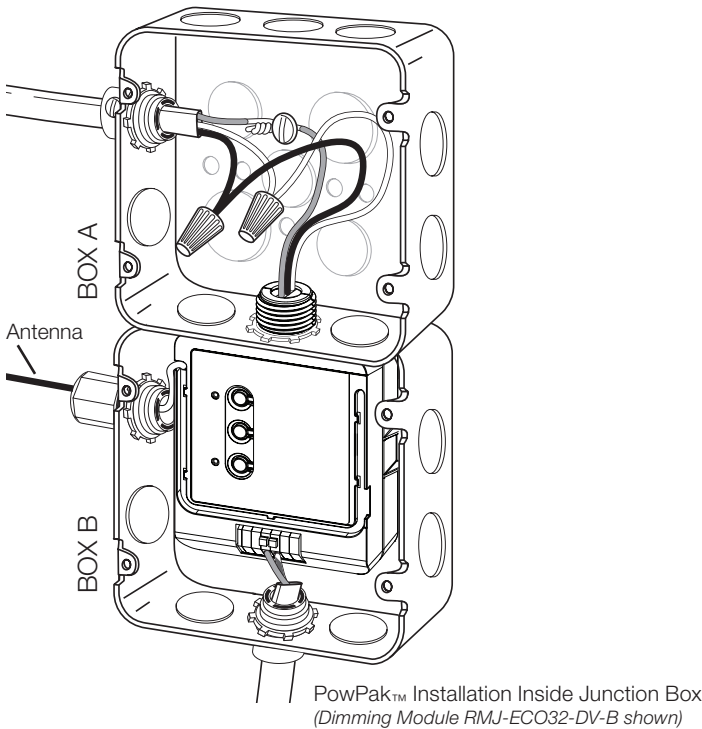
Job Name:	Model Numbers:
Job Number:	

Dimensions

Dimensions are shown as: in (mm)

Half-inch
NPT Trade Size

3.94
(100.1)

3.42
(86.9)

2.82
(71.6)

1.25
(31.8)

Range Diagram

**PowPak™
Relay Module**
Install in center of room to
maximize RF coverage.

**Radio
Powr Savr™
Occupancy
Sensor**

30 ft (10 m)

Maximum

30 ft (10 m)

**Pico®
Wireless
Transmitter**

40 ft (12 m)

**All Wireless Transmitters must be installed within
30 ft (10 m) of the PowPak™ Relay Module.**

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

✸**LUTRON**® SPECIFICATION SUBMITTAL   Page

Job Name:	Model Numbers:
Job Number:	

Default Operation

Transmitting Device	Transmitted Command	SoftSwitch® Relay Default Action	CCO Default Action
Pico®	On	Close	No Action
	Off	Open	No Action
	Raise	No Action	No Action
	Lower	No Action	No Action
	Preset	Close	No Action
Radio Powr Savr™ Occupancy Sensor	Occupied	Close	NO = Close, NC = Open
	Unoccupied	Open	NO = Open, NC = Close
Radio Powr Savr™ Vacancy Sensor	Occupied	No Action	NO = Close, NC = Open
	Unoccupied	Open	NO = Open, NC = Close
Radio Powr Savr™ Daylight Sensor	Ambient Light Below Target Level	Close	No Action
	Ambient Light Above Target Level	Open	No Action

Job Name:	Model Numbers:
Job Number:	