LEVITON®

Energy Management

The Smart Choice for Lighting Control and Energy Solutions

For most companies, the last time they reaped significant financial benefit from a change in their lighting systems was with an upgrade to more efficient lamps and electronic ballasts. But a lot has changed since then. Now, in virtually every business, there is an opportunity to significantly reduce existing lighting costs further by adopting newly developed energy management control systems.
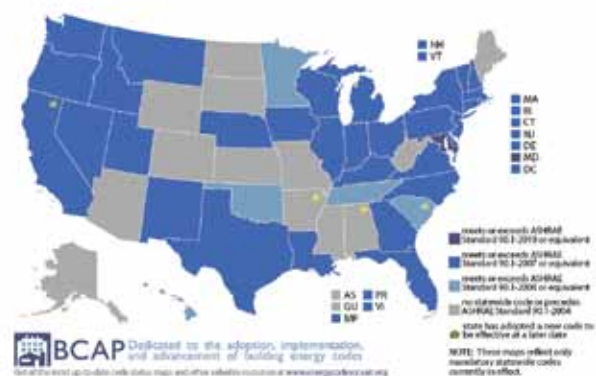
WHY ADOPT ENERGY MANAGEMENT CONTROLS NOW? IT'S THE CODE.

Energy codes are now the law of the land. From the ASHRAE/IESNA 90.1 Energy Standard and IECC, to LEED, CEC Title 24 2005 and more, federal and state codes are underscoring the need for better energy-saving controls for lighting by either mandating compliance or encouraging it with tax incentives and utility rebates.

COMPETITIVE ADVANTAGE

Energy costs are rising faster than ever before, making the reduction of energy consumption by business-es an increasingly more powerful competitive advantage. With over 38% of a typical business' energy bill related to lighting, energy saving controls for lighting are squarely at the center of any effort to reduce energy expenditures.

Commercial State Energy Code Status
AS OF JULY 1, 2012

LEVITON COMMERCIAL LIGHTING CONTROL SOLUTIONS

Every industry, facility and application has different lighting control needs. Some needs can be met with a simple solution, such as an occupancy sensor, while others require the advanced customization and control of GreenMAX® and Sector®. Leviton offers a spectrum of lighting control and energy management strategies to meet any application:

- **Occupancy Sensing Control**
  A complete line of PIR, ultrasonic and multi-technology occupancy sensors

- **Room Control**
  LevNet RF™ Energy Harvesting Solutions, Classroom Lighting Control Solutions and miniZ™ Intelligent Daylight Harvesting System

- **Centralized Control**
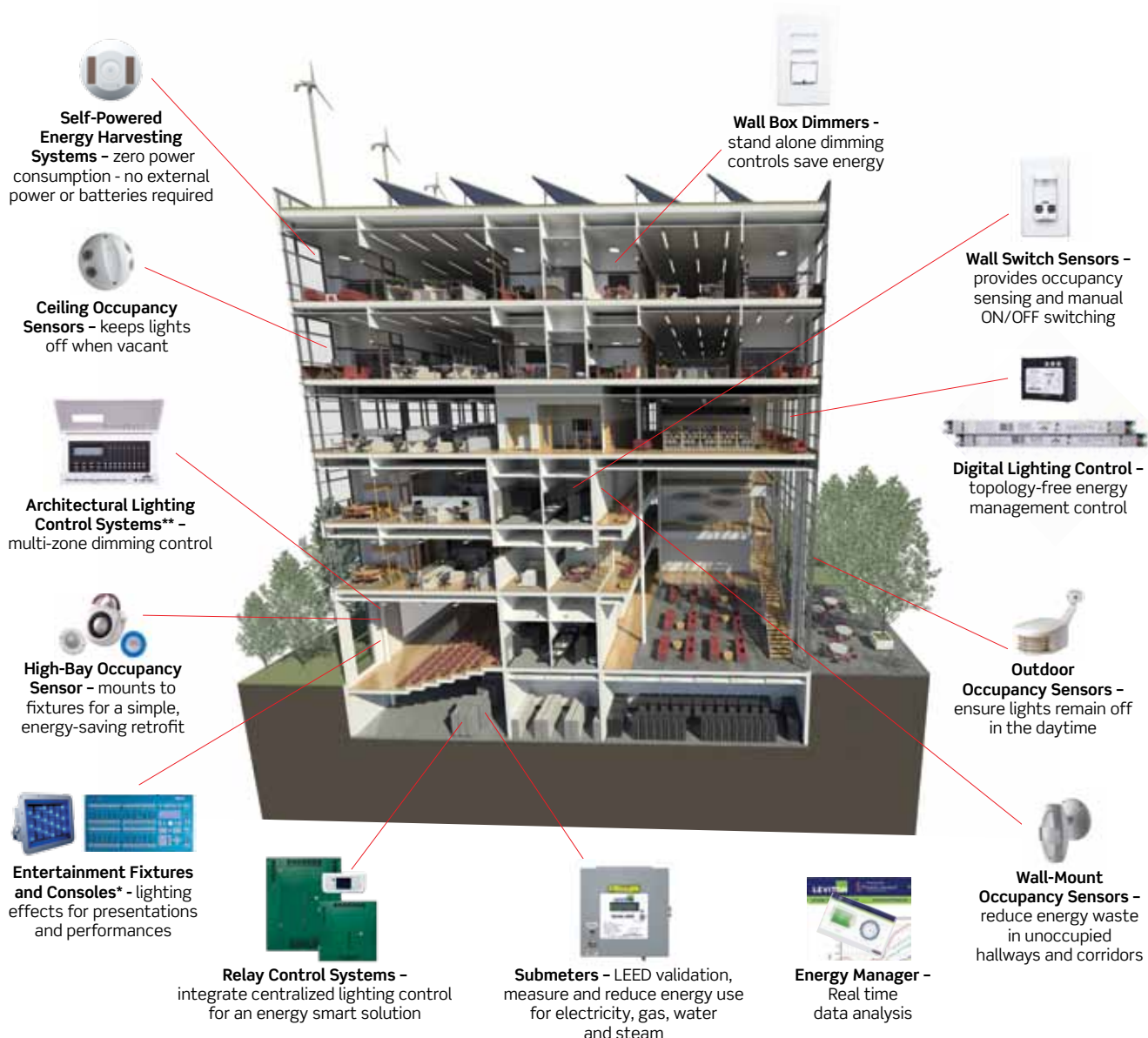 EZ-MAX® Plus and GreenMAX Relay Control Systems

- **Distributed Control**
  Sector and SectorFlex Intelligent Digital Lighting Control Systems

- **Hybrid Controls**
  Combined Leviton technologies to meet any application

- **Metering Solutions**
  Leviton Metering Solutions system components including submetering equipment and Energy Management software

Self-Powered Energy Harvesting Systems – zero power consumption - no external power or batteries required

Ceiling Occupancy Sensors – keeps lights off when vacant

Architectural Lighting Control Systems – multi-zone dimming control

High-Bay Occupancy Sensor – mounts to fixtures for a simple, energy-saving retrofit

Entertainment Fixtures and Consoles - lighting effects for presentations and performances

Wall Box Dimmers - stand alone dimming controls save energy

Wall Switch Sensors – provides occupancy sensing and manual ON/OFF switching

Digital Lighting Control – topology-free energy management control

Outdoor Occupancy Sensors – ensure lights remain off in the daytime

Wall-Mount Occupancy Sensors – reduce energy waste in unoccupied hallways and corridors

Relay Control Systems – integrate centralized lighting control for an energy smart solution

Submeters – LEED validation, measure and reduce energy use for electricity, gas, water and steam

Energy Manager – Real time data analysis

*Please see the Leviton Commercial Entertainment Product Catalog for more information, or visit Leviton.com/Entertainment.
**Please see the Leviton Commercial Architectural Controls Catalog for more information, or visit Leviton.com/Architectural.

www.leviton.com/les

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Leviton Lighting Control Solutions can be selected and tailored to commercial, institutional and industrial applications including:

- Single, small, midsize and large office complexes
- K-12 schools and college campuses
- Museums, convention centers and lecture halls
- Health care and hospital facilities
- Warehouses
- Restaurants
- Shopping malls and complexes
- Government facilities
- Airports
- National parks and monuments

- Retail spaces
- Municipalities
- Prison and correctional facilities
- Houses of worship

Leviton Lighting Control Solutions help facilities meet energy saving and lighting control goals. Using simple and advanced methods, Leviton Solutions leverage energy saving technologies for:

Code Compliance Implementing a Leviton solution as a new construction or retrofit project can accomplish goals set by state, federal and local municipal codes for sustainability and energy efficiency. Tax incentives and utility company rebates are also available for eligible projects. Leviton devices can help meet ASHRAE, CEC Title 24, IECC and LEED certification requirements. Learn more about specific product code compliance at www.leviton.com/energycodes.

Dimming and Switched Lighting Whether switching lights ON or OFF based on occupancy or subtly dimming multiple zones, reducing lighting is one of the easiest ways to reduce overall electricity consumption. Dimmed or OFF lights produce less heat, which reduces facility cooling costs. By being on less, light bulbs last longer, translating to additional cost savings. Leviton dimming and switching products include: box-mounted dimmers; scene dimming stations and controllers; and sophisticated multizone dimming systems that incorporate dimming and relay cabinets, architectural lighting, and more. These products can help buildings meet mandatory ASHRAE 90.1-2010 and CEC Title 24 requirements.

| Dimming incandescent lights by:	Reduces energy consumption by:
10%	10%
25%	20%
50%	40%
75%	60%

Occupancy Detection In the majority of cases, if a facility is empty, lights should be OFF. Occupancy sensing takes the burden of lighting control from occupants and into a self-contained, automated system. Numerous styles of occupancy sensors accommodate a broad range of coverage areas and patterns of usage. Leviton's occupancy sensor line includes commercial and residential, energy harvesting, wide-view and high-bay, dual-relay and outdoor models for a broad range of coverage areas and patterns. These products can help buildings meet mandatory ASHRAE 90.1-2010, IECC-2012 and CEC Title 24 requirements, and earn LEED certification.

Timed Controls Using timers to automate switching of lights and other loads is a simple way to ensure that devices are only on for a set period of time. Sophisticated relay systems (such as EZ-MAX Plus and GreenMAX) provide advanced load scheduling based on scheduled or astronomical time. Leviton offers preset and programmable timer switches as well as relay systems that integrate with lighting and other building controls in commercial and industrial applications. These products can help buildings meet mandatory ASHRAE 90.1-2010, IECC-2012 and CEC Title 24 requirements, and earn LEED certification.
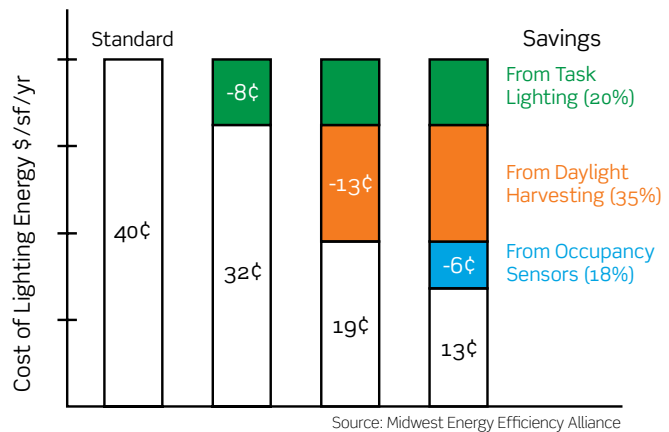
Integration with Building Controls When lighting, security, HVAC and other building management systems are integrated into a single control system, optimal energy efficiency is one of a host of benefits. Integrated systems provide superior interoperability as well as essential function for companies participating in load shedding programs. Leviton energy management components are building blocks that can interact with other Leviton products and, in some cases, with non-Leviton building controls.

POTENTIAL SAVINGS WITH LIGHTING CONTROL STRATEGIES
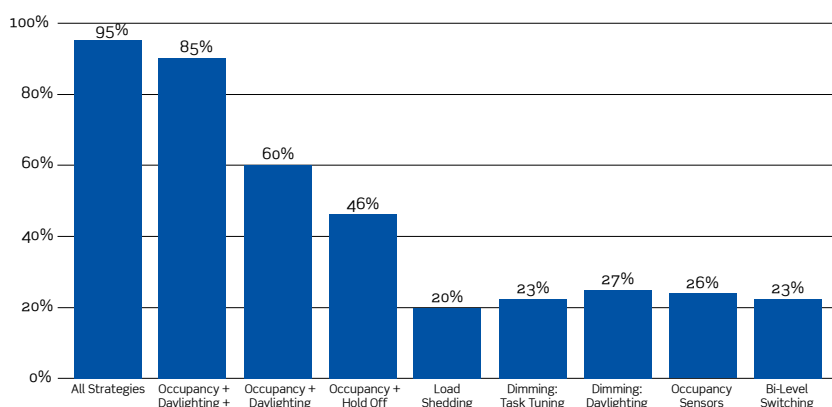
Daylight Harvesting By utilizing present natural light within a space, facilities reap the dual benefits of reduced energy usage and a more pleasant, ambient building environment. Photocells and timed systems (such as GreenMAX, EZ-MAX Plus, Sector and SectorFlex) measure light provided by windows, skylights and open spaces and dim or switch OFF overhead lighting accordingly. Leviton offers photocells, occupancy sensors, relay cabinets, dimmers and dimming systems for daylight harvesting systems. These products can help buildings meet mandatory IECC-2012 and CEC Title 24 requirements, and earn LEED certification.

Cost of Lighting Energy $/sf/yr

Standard — 40¢

Savings
-8¢ / 32¢
-13¢ / 19¢
-6¢ / 13¢

From Task Lighting (20%)
From Daylight Harvesting (35%)
From Occupancy Sensors (18%)

Source: Midwest Energy Efficiency Alliance

BENEFITS FROM DAYLIGHT HARVESTING

- Energy savings
- Reduce peak electric load
- Allow continued operation during power outages
- Connecting people to their external environment
- Improved productivity and health

Lighting, heating and air conditioning account for up to 70% of all energy being consumed in today's modern buildings. Daylight harvesting controls are the best way to optimize the low cost, natural resource of daylight.
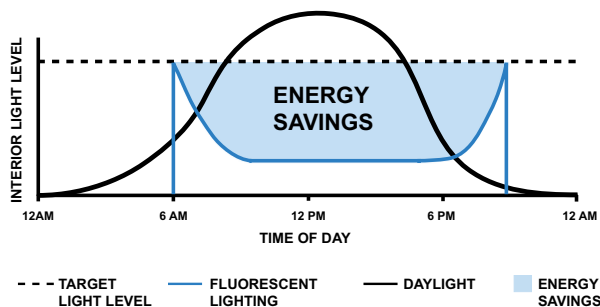
Key energy saving points for Daylight Harvesting
- Architectural Daylighting design utilizing top, side and surface lighting can reduce glare and heat concerns
- Assuring lights are only utilized when light is required and space is occupied
- Automatically balancing natural and artificial light for optimized lighting usage
- Switched or dimmed light loads have less heat emissions which reduces cooling costs
- Shading systems assist in maintaining environmental controls, reducing glare and maintaining scenic views.
- Solar screening controls lights without eliminating it
- Lighting and Energy Solutions provide total energy efficient control and savings

Source: Commercial Buildings Energy Consumption Survey (CBECS) 1995, released July 1998 by the Energy Information Administration

GREATER HEALTH, WELL BEING AND PRODUCTIVITY

Studies done by the United States Green Building Council (USGBC) have shown that daylighting can improve health, well-being and productivity of individuals, co-workers, students and employees. The determining factors for this are not only from the amount of natural scenery and light, but from the quality and color of the artificial lamp light. Daylight harvesting technology strives to achieve this optimal color temperature and rendition to provide visual stimulation for health, well-being and productivity.

Daylighting Harvesting

INTERIOR LIGHT LEVEL

ENERGY SAVINGS

12AM   6 AM   12 PM   6 PM   12 AM
TIME OF DAY

- - - TARGET LIGHT LEVEL
— FLUORESCENT LIGHTING
— DAYLIGHT
ENERGY SAVINGS

Source: Lighting Design Lab

OCCUPANCY SENSING CONTROL

Occupancy sensors deliver one of the simplest and most effective methods of reducing energy usage. Basic rooms such as restrooms, private offices, medical exam rooms and meeting rooms will see a significant drop in lighting costs when an occupancy sensor is installed.

GOOD SOLUTION

OCCUPANCY SENSOR WITH AUTO ON/OFF CONTROL

PROBLEM: Facility contains rooms that are sporadically occupied and do not require manual override capabilities.

SOLUTION: A single auto ON/OFF occupancy sensor takes the burden of lighting control off the occupants, ensuring lights are ON when they are needed and OFF when they are not.

• Works best in enclosed spaces without obstructions

• Economical solution with immediate results

• Saves a significant amount of energy over traditional switch-operated spaces

• **Ideal Applications**: Restrooms, conference rooms, closets and storage areas

PIR Ceiling Sensor

Zone 1
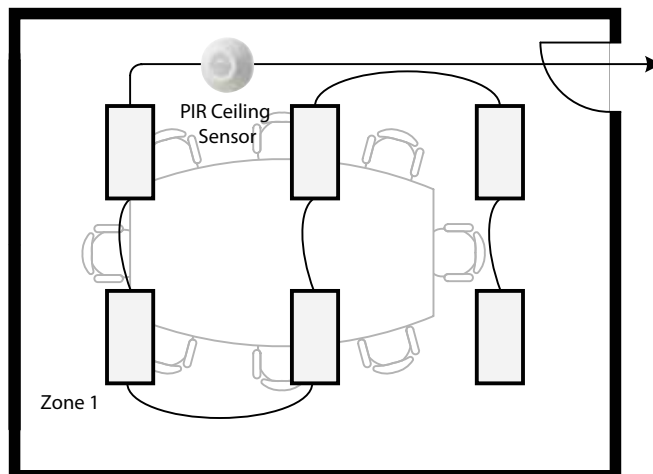
SOLUTION REQUIREMENTS

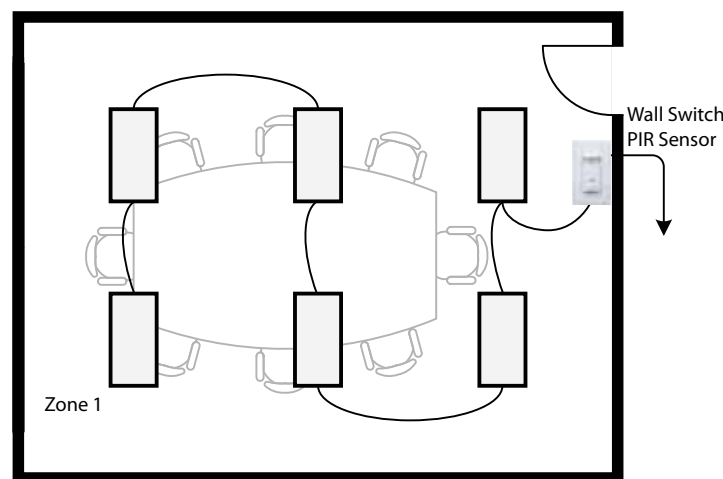|	PRODUCT	QUANTITY
	Occupancy Sensor ODCoS Self-Contained PIR Ceiling Mount Occupancy Sensor **OR** OPB15 & OSC15-I/M Passive Infrared Ceiling Occupancy Sensor and Power Base Adaptor	1

BETTER SOLUTION

OCCUPANCY SENSOR WITH MANUAL-ON/OFF CONTROL

PROBLEM: Occupancy sensor control is desired, but manual overrides by occupants may occasionally be necessary to accommodate temporary needs.

SOLUTION: Occupancy sensors with manual-ON/OFF control add a level of flexibility to the occupancy sensing solution. Users can manually override the sensors by switching ON or OFF to accommodate temporary needs.

• Combines the energy savings of occupancy sensing with the convenience of manual-ON/OFF switching

• Cost-effective method of regulating lighting usage

• **Ideal Applications:** Smaller enclosed areas such as private offices, conference rooms, classrooms and storage spaces

Wall Switch PIR Sensor

Zone 1

SOLUTION REQUIREMENTS

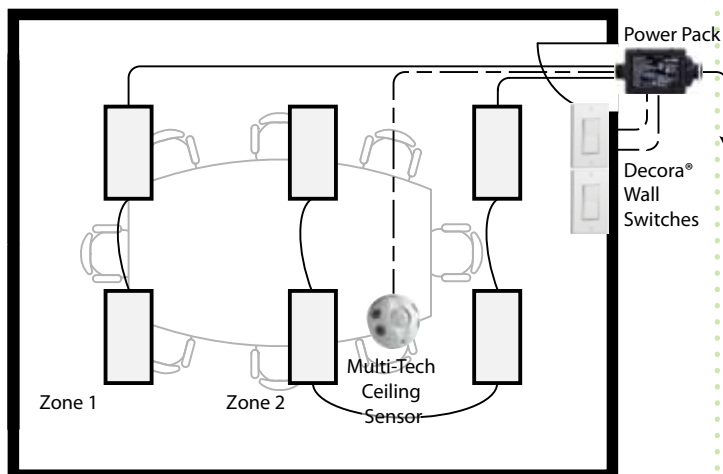|	PRODUCT	QUANTITY
	Occupancy Sensor ODS10 PIR Wall Switch Occupancy Sensor **OR** OSSMT Multi-Technology Wall Switch Occupancy Sensor **For Bi-Level Switching:** ODSoD PIR Dual-Relay Wall Switch Occupancy Sensor **OR** OSSMD Multi-Technology Dual-Relay Wall Switch Occupancy Sensor	1

BEST SOLUTION

OCCUPANCY SENSOR MULTI-ZONE/BI-LEVEL SWITCHING SOLUTION

PROBLEM: Room is used in multiple applications, and the same levels of light are not always desired.

SOLUTION: By dividing a space into zones, lighting becomes more versatile. Multi-zone/bi-level switching, controlled by an occupancy sensor, allows occupants to accommodate A/V presentations, computer usage and other tasks where full overhead lighting is not desired. The integration of a Power Pack with HVAC relay lends the option of incorporating heating and cooling systems into the occupancy sensor control for additional energy savings.

Power Pack
Decora® Wall Switches
Zone 1 Zone 2
Multi-Tech Ceiling Sensor

- Multi-zone/bi-level lighting maximizes energy savings through use of both manual and automatic controls
- Offers various lighting settings for different tasks and preferences
- Occupancy sensing adds a valuable, low-cost energy saving technique
- Flexibility with two zone settings, manual switching controls and HVAC integration
- **Ideal Applications:** Meeting and conference rooms, classrooms, training areas and small commercial spaces

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	Occupancy Sensor OSC15-I PIR Ceiling Occupancy Sensor **OR** OSC20-M Multi-Technology Ceiling Occupancy Sensor	1
	Add-a-Relay Power Pack OSP20-RDH	1
	Decora Plus Rocker Commercial Grade Switch 56081-2	2

OCCUPANCY SENSING CASE STUDIES

BRONNER'S CHRISTMAS WONDERLAND
Commercial Warehouse Space, Frankenmuth, Michigan

Bronner's Christmas Wonderland contained a large storage, shipping and receiving area that was normally illuminated when unoccupied. Leviton divided the warehouse into separate aisleways, with each aisle containing an OSFHU high-bay fixture-mount occupancy sensor. Once installed, switching the lights OFF when aisles were unoccupied equated to a 90% reduction in energy usage.

LAVA BEDS NATIONAL PARK
Parks and Recreation, Tulelake, CA

Lava Beds National Monument contains 47,000 acres of park lands including lava tube caves, rugged desert terrain and historical sites. Leviton's LevNet RF products were selected to help control lighting in common areas, offices and restrooms. The results were annual savings of approximately 65,000 kWh and $6,400 in energy costs.

ROOM CONTROL

Leviton Room Control solutions build on the foundation of occupancy sensing to add value and convenience for facilities. Room controls introduce daylight harvesting capabilities, which takes advantage of natural light entering a space from windows, skylights and other open spaces. Utilizing daylight to evenly light a room while improving productivity and user experience diminishes the amount of overhead lighting necessary to light the space.

GOOD SOLUTION

LEVNET RF DAYLIGHT HARVESTING SWITCHING SOLUTION

PROBLEM: Facility wants to implement an occupancy sensing and daylight harvesting solution, but cannot interrupt building functionality with a costly wiring project.

SOLUTION: Versatile, easy-to-retrofit and maintenance-free, LevNet RF offers an ideal energy management solution. Switches and sensors communicate wirelessly and respond to ambient light and occupancy within the space to turn lights ON and OFF.

- Energy harvesting solution is easy to install with no need to pull or run wires, speeding up installation and significantly reducing costs
- No batteries means associated labor, material and maintenance costs are eliminated
- Basic daylight harvesting solution with photocell to measure ambient light, reducing overall energy use
- **Ideal Applications:** Private offices, meeting and conference rooms, hotel rooms and classrooms with windows and/or skylights
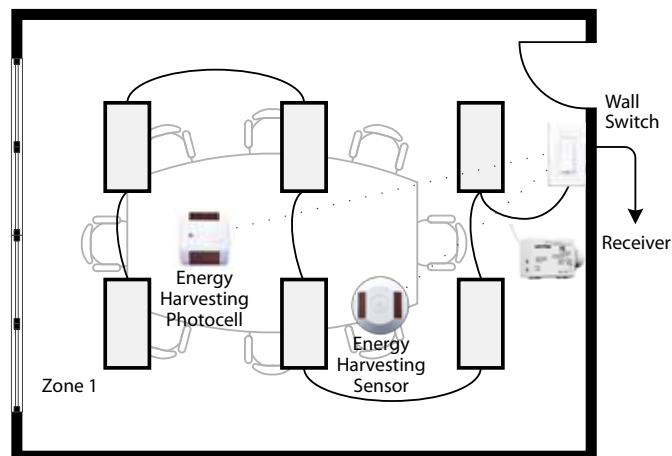
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	LevNet RF Energy Harvesting Occupancy Sensor WSC04-IRW	1
	LevNet RF Energy Harvesting Photocell WSCPC-00W	1
	LevNet RF Wall Switch WSS0S-00D	1
	LevNet RF Line Voltage Receiver WST05-10	1

GOOD SOLUTION

miniZ INTELLIGENT DAYLIGHT HARVESTING DUAL-ROOM SOLUTIONS

PROBLEM: Similar office spaces share fixtures on separate zones, but will be used by occupants at different times.

SOLUTION: The miniZ Dual Room system allows separate spaces to be controlled on separate zones. Connected occupancy sensors and photocells account for different levels of light and/or occupancy in each unique space. miniZ switching solutions keep lights OFF when the room is unoccupied. The miniZ switching module controls two zones, which allows for switching the lights in areas where levels of occupancy are not the same. The miniZ dimming solution creates a more ambient space by allowing natural light to be utilized in place of overhead lighting, which reduces energy use while increasing user satisfaction.

- Cost-effective solution allows separate spaces to be centrally controlled with separate switching or dimming needs for different levels of light and occupancy for each zone
- Adjusts overhead lighting based on daylight present in each space
- User-friendly system incorporates multiple occupancy sensors and photocells for streamlined programming and ease-of-use
- **Ideal Applications:** Windowed and skylit spaces such as classrooms, private offices, conference rooms and small shops

DUAL-ROOM SWITCHING
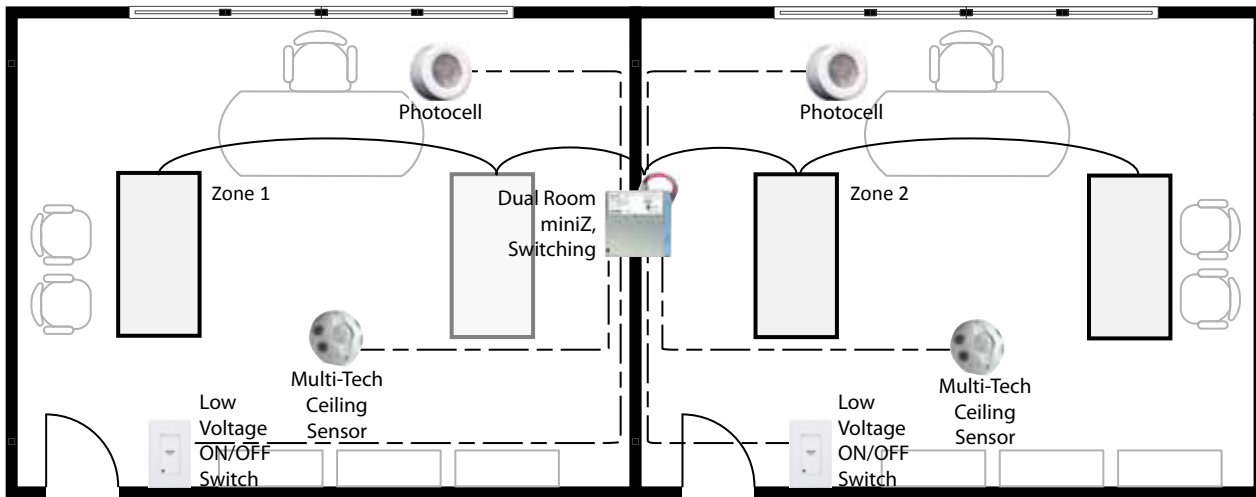
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	miniZ 2-Zone, Switching MZB02-102	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC10-M0W	2
	Low Voltage Switch, ON/OFF LV240-00W	2
	Photocell ODC0P-00W	2

DUAL-ROOM DIMMING

Photocell

Zone 1

Dual Room miniZ, Dimming

Zone 2

Photocell

Multi-Tech Wall Sensor

Multi-Tech Wall Sensor

Low Voltage 5-Button Switch

Low Voltage 5-Button Switch
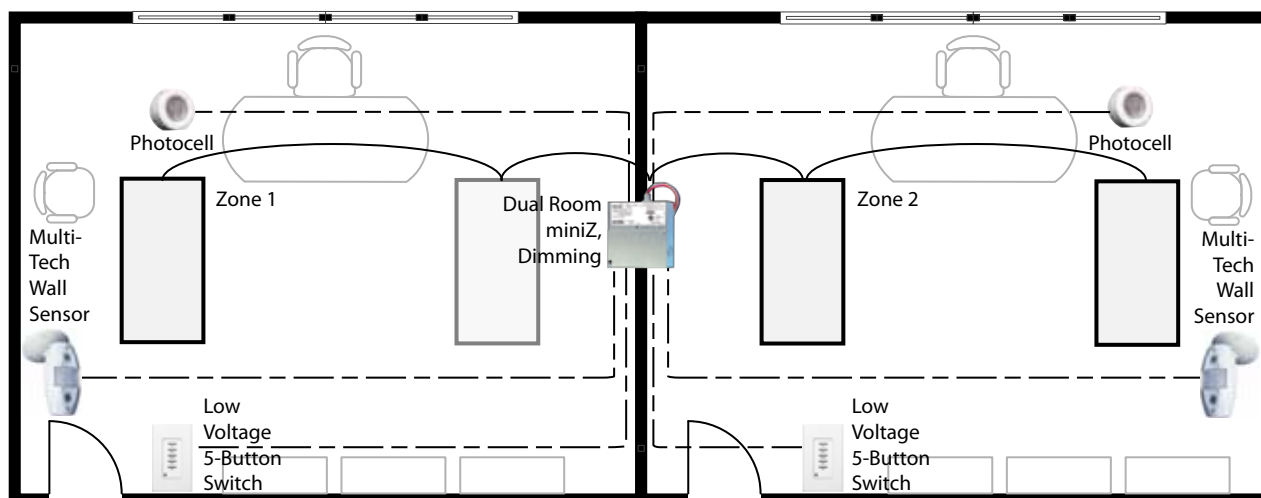
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	Dual Room miniZ, Dimming MZD22-102	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSW12-M0W	2
	Photocell ODC0P-00W	2
	Low Voltage Switch, 5-Button LV200-00W	2

BETTER SOLUTION

LEVNET RF MULTI-ZONE DAYLIGHT HARVESTING SOLUTION

PROBLEM: Space contains several zones of overhead lights, and those closest to natural light sources are needed less than those further away.

SOLUTION: LevNet RF adds an extra dimension of energy conservation with daylight harvesting and dual-zone switching. Energy Harvesting photocells measure the natural light entering from windows, skylights and open areas and switch lights ON or OFF to compensate. By adding zonal control, lights very close to windows stay OFF longer than lights placed further in for a more evenly-lit, user-friendly space.

- Control two zones of lighting to evenly light the space and accommodate A/V presentations, quiet times, etc.
- Switches can override occupancy sensor and photocell when temporary manual control is needed
- Self-powered with no hard wiring makes the solution easy to install in tough-to-wire retrofits
- **Ideal Applications:** Classrooms, presentation and meeting rooms, offices and hospitality
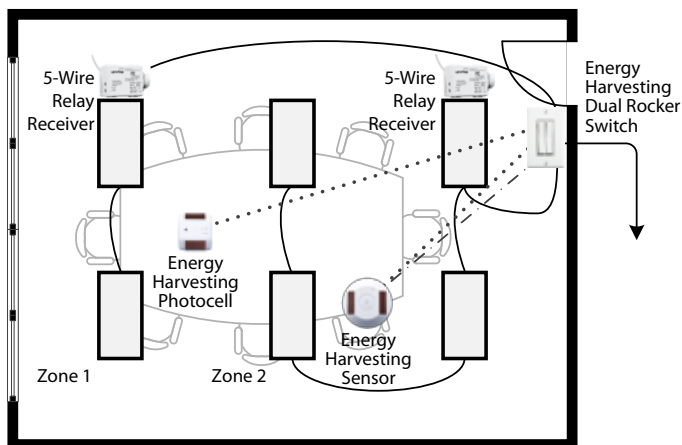
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	LevNet RF Energy Harvesting Sensor WSC04-IRW	1
	LevNet RF Energy Harvesting Photocell WSCPC-00W	1
	LevNet RF Dual Rocker Decora Switch WSS0S-D2W	1
	LevNet RF 5-Wire Relay Receiver WST12-020	2

BETTER SOLUTION
miniZ MULTI-ZONE BI-LEVEL SWITCHING SOLUTION

PROBLEM: Facility contains lighting fixtures that are zoned to switch by lamp. Lighting that switches incrementally is desired. Incorporation of photocells, occupancy sensors and manual switches is necessary for users to make optimal use of the space.

SOLUTION: miniZ enables rooms to be bi-level switched, so that zoned lamps are dimmed when adequate natural light is present and are turned OFF when the room is vacant. Centralize all levels of the room, including sensors and switches, with miniZ's easy-to-use auto-calibration technology.

- By dividing fixtures into zones, lighting in occupied zones can be automatically or manually switched ON/OFF while the unused areas remain OFF (A/V presentations, offices used by individuals at odd hours).
- Switching brings a simple solution to each unique space
- **Ideal Applications:** Schools, office complexes, restaurants and mixed-use commercial and residential spaces
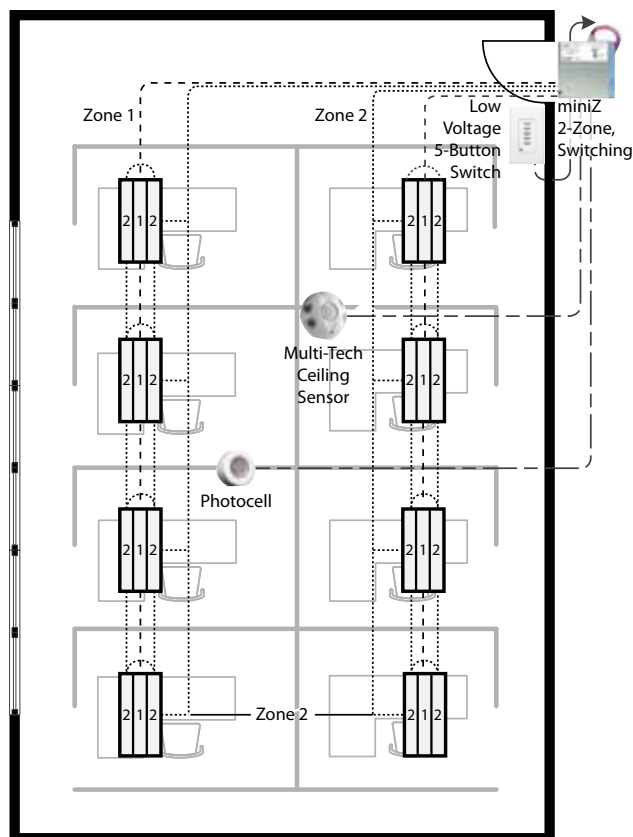
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	miniZ 2-Zone, Switching MZB00-102	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	1
	Photocell ODC0P-00W	1
	Low Voltage Switch, 5-Button 00LVS-05W	1

BEST SOLUTION

miniZ INTELLIGENT DAYLIGHT HARVESTING 3-ZONE DIMMING SOLUTION

PROBLEM: Room requires manual control of staggered zones of lights, ranging from closest into the building to furthest toward the window. Additionally, occupants desire the flexibility to manually switch the zones ON and OFF to accommodate temporary needs for presentations, media viewing, etc.

SOLUTION: Stagger the dimming of light loads with the miniZ 3-zone dimming system. miniZ self-calibrates to a maintained light level to optimize lighting within a space while taking advantage of ambient light. Zones can be manually switched ON or OFF to compensate for specific occupant needs, such as switching lights near a projection screen OFF during a presentation.

- Occupancy sensors keep lights OFF when the space is empty, while photocell and miniZ measure and manage lighting when occupied for better ambience and energy conservation
- Daylight harvesting of 3 zones offers a more comfortable, ambient environment which increases end user satisfaction
- **Ideal Applications:** Education applications, hospital waiting areas and lobbies
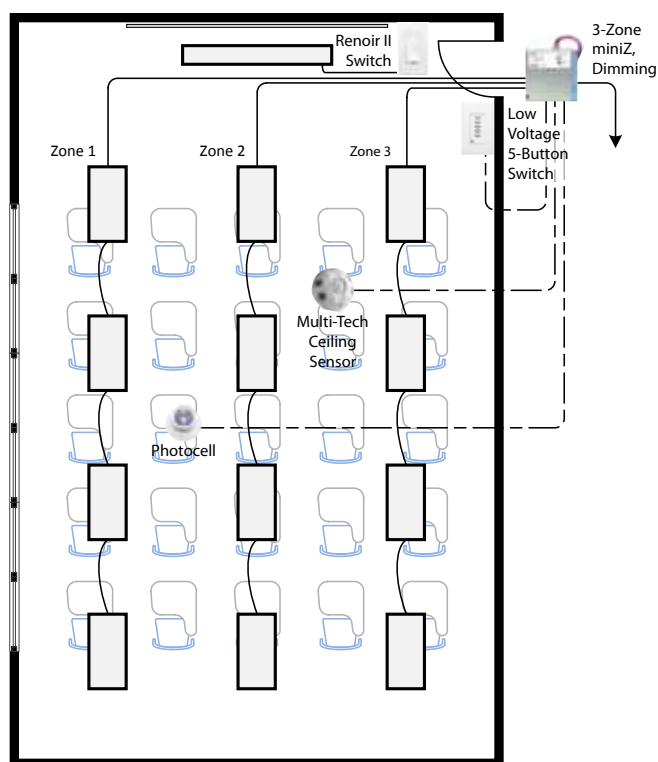
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	miniZ 3-Zone, Dimming MZD30-101	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	1
	Photocell PCIND-000	1
	Low Voltage Switch, 5-Button LV220-00W	1
	Renoir II Wall Switch, Thin Heat Sink AWWMT-00W	1

BEST SOLUTION
LEVNET RF ZONAL AND INDIVIDUAL FIXTURE CONTROL

Energy Harvesting Sensor

Energy Harvesting Dual Rocker Switch

Relay Receiver

Energy Harvesting Photocell

Energy Harvesting Sensor

Energy Harvesting Wall Switch Receiver

Energy Harvesting Wall Switch Receiver

Relay Receiver

Energy Harvesting Sensor

Energy Harvesting Single and Dual Rocker Switches

Relay Receiver

Relay Receiver

Relay Receiver

Energy Harvesting Photocell

Zone 1   Zone 2   Zone 3

PROBLEM: Facility with multiple rooms and uses wants to implement one energy management system as a retrofit. Some overhead lights should be controlled as zones and respond to occupancy sensing and daylight harvesting controls as one, while other fixtures require individual manual and sensing controls.

SOLUTION: LevNet RF system components can be combined to create dynamic lighting options for a variety of spaces. Zones can be designated in rooms by connecting LevNet RF dimmer modules to ganged fixtures, which respond to the occupancy sensor, photocell and switch signals to dim lighting by groups of lights incrementally further from daylight sources. In large open spaces where windows are not present, individual fixtures or small groups of fixtures can be switched ON or OFF by occupancy sensors and manual switching.

- Easy-to-retrofit, energy harvesting technology can be installed and modified to accommodate evolving needs of the space, significantly reducing labor and material costs
- Create zonal control by assigning one dimmer module to a ganged set of fixtures and an associated switch, or individual fixture control by placing one line voltage per fixture to respond to occupancy sensor signals. The entire area can be manually controlled ON or OFF by switch. The result is flexibility at a low cost
- **Ideal Applications:** Schools, college campuses, libraries, municipal buildings, mixed-use commercial and residential spaces and hospitality

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	LevNet RF Relay Receiver WST05-010	21
	LevNet RF Energy Harvesting Sensor WSC04-IRW	11
	LevNet RF Energy Harvesting Photocell WSCPC-00W	2
	LevNet RF Wall Switch Receiver WSS10-GDW	3
	LevNet RF Dual Rocker Switch Receiver WSS0S-D2W	2

ROOM CONTROL CASE STUDY

UC SANTA CRUZ SCIENCE AND ENGINEERING LIBRARY
Post-Secondary Education, Santa Cruz, California

The Science and Engineering Library is one of two libraries that serve over 16,000 students on the UC Santa Cruz campus. Faced with time constraints and the high cost of conventional wired technologies, the energy group chose to use Leviton's energy harvesting technologies to achieve their energy goals. LevNet RF receivers paired to energy harvesting occupancy sensors and light sensors contributed to the energy retrofit of the existing fluorescent fixtures from T12 to T8 and saved an actual 50% of energy consumption in the facility—an anticipated $48,000 energy cost savings annually.

CENTRALIZED CONTROL

Total facility control from one access point is the goal of Leviton's Centralized Control Solutions. Relay panels, including the EZ-MAX Plus and GreenMAX models, integrate multiple room controls into a single system that reduces troubleshooting, narrows the scope of maintenance and expedites installation, which translates into significant labor cost savings. With advanced features such as GreenMAX's programmable Behaviors, Centralized Control opens up new possibilities for managing energy use while making the facility safer, smarter and more user-friendly.

GOOD SOLUTION

EZ-MAX PLUS RELAY ZONAL CONTROL

PROBLEM: More precise energy control is required in the building, such as programming in a school's daily class schedule.

SOLUTION: EZ-MAX Plus offers programmed energy management in an affordable, compact stand-alone relay panel system. The system can be easily programmed to automatically turn lights ON or OFF based on planned times (open/close) or astronomical clock (sunrise/sunset). Occupancy sensor and photocell integration enhance programmed settings with daylight harvesting and ON/OFF occupancy switching.

- Single point of facility control saves on labor and maintenance costs
- Programmable ON/OFF features consistently keep lights ON when lighting is likely needed and OFF when unused
- Time clock feature useful for controlling common areas and site lighting for added safety in courtyards, parking lots, etc.
- **Ideal Applications:** Restaurants, offices, houses of worship and retail spaces
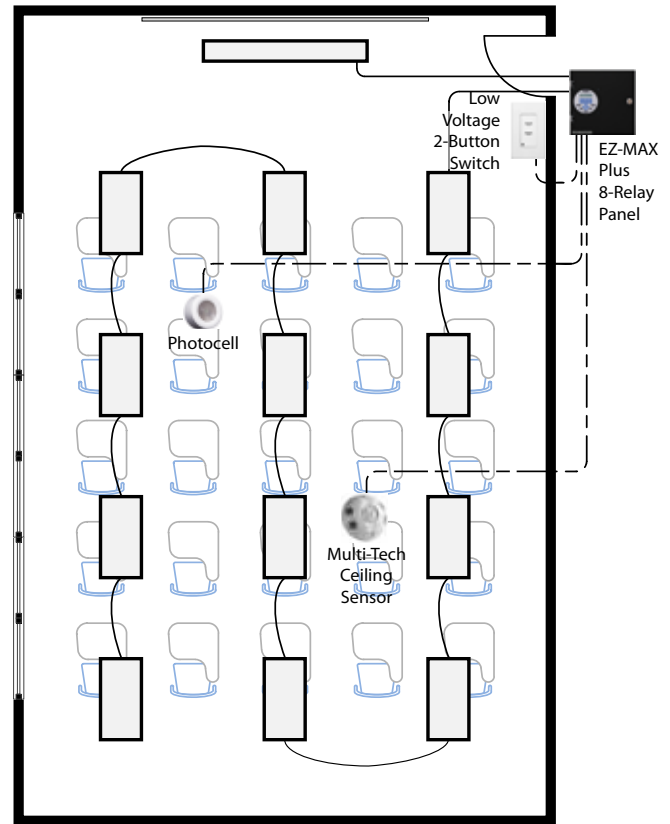
Low Voltage 2-Button Switch

EZ-MAX Plus 8-Relay Panel

Photocell

Multi-Tech Ceiling Sensor

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	EZ-MAX Plus 8-Relay Panel R08BD-L30	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	1
	Photocell ODC0P-00W	1
	Low Voltage 2-Button Switch 00LVS-02W	1

BETTER SOLUTION

EZ-MAX PLUS RELAY– A/V CLASSROOM

PROBLEM: Facility seeks to incorporate timing and astro-nomical clock control into a facility where overhead lights are designed to be manually controlled to accommodate presentations, media viewing, etc.

SOLUTION: The EZ-MAX Plus solution allows for modern schools to accommodate evolving classroom needs. Many classes now include dynamic visuals requiring the use of projection screens, TV and computer monitors as presentation tools. EZ-MAX Plus can be programmed to control the lighting zone at the head of the class separately from the lights over desks.

- Reduce eye strain from trying to watch A/V presentations in full overhead light
- Allows instructors to adjust lighting in presentation area while the student zone remains lit by ambient and overhead lighting for note-taking
- **Ideal Applications:** K-12 classrooms, college campuses and office training facilities
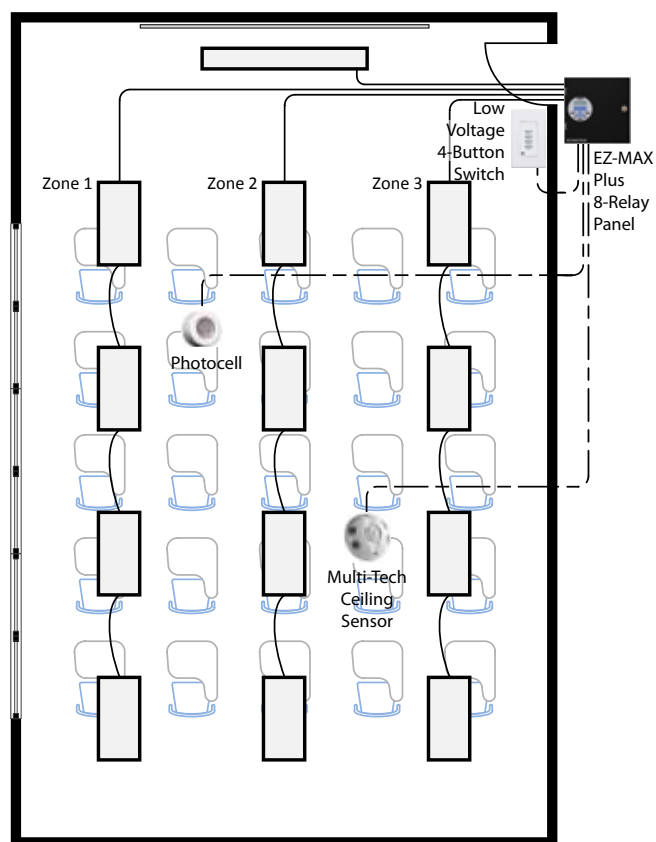
SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	EZ-MAX Plus 8-Relay Panel R08BD-L30	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	1
	Photocell ODC0P-00W	1
	Low Voltage 4-Button Switch 00LVS-04W	1

BEST SOLUTION
GREENMAX

Photocell

Multi-Tech Ceiling Sensor

4-Button Digital Switch

4-Button Digital Switch

Multi-Tech Ceiling Sensor

1-Button Digital Switch

1-Button Digital Switch

Photocell

Multi-Tech Ceiling Sensor

4-Button Digital Switch

GreenMAX Relay System

4-Button Digital Switch

Multi-Tech Ceiling Sensor

Multi-Tech Ceiling Sensor

Multi-Tech Ceiling Sensor

Keyswitch Digital Switch

PROBLEM: Commercial facility has several rooms that utilize occupancy sensors and daylight harvesting technologies, but does not require specific zonal controls.

SOLUTION: Installing several GreenMAX systems allows for similar rooms to be controlled from a central location. Pre-programmed Behaviors can be set to anticipate daily routine patterns of usage, along with circumstances such as closures and breaks.

- Practical solution for large buildings with many smaller rooms, but not requiring numerous zonal configurations
- Centralized control for time-settings; ready to integrate with building automation systems
- **Ideal Applications:** Office buildings, schools, college campuses, municipal buildings, airports

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
GREENMAX RELAY SYSTEM COMPONENTS		
	GreenMAX Relay Cabinet, 8-Relay Size R08TC-100	1
	GreenMAX Relay Cabinet, 32-Relay Size R32TC-100	1
	GreenMAX Main Command Module RPM16-110	2
	GreenMAX Relay Insert Panel - 8-Relay Size R0800-000	1
	GreenMAX Relay Insert Panel - 16-Relay Size with 16 GreenMAX Dimming Relays R1616-1DS	2
	GreenMAX Dimming Relays RELAY-1DS	8
GREENMAX EXTERNAL SYSTEM COMPONENTS		
	GreenMAX Handheld Display Unit (HDU) RHDUI-000	1
	GreenMAX Digital Switch, 4-Button RDGSW-4DW	4
	GreenMAX Digital Switch, 1-Button RDGSW-1DW	4
	GreenMAX Digital Switch, Keyswitch RGDSW-1KS	1
	Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	6
	Photocell ODC0P-0DW	2

BEST SOLUTION
GREENMAX ZONAL CONTROL

GreenMAX Relay System

GreenMAX Relay System

Photocell

Multi-Tech Ceiling Sensor

4-Button Digital Switch

4-Button Digital Switch

Multi-Tech Ceiling Sensor

1-Button Digital Switch

1-Button Digital Switch

1-Button Digital Switch

1-Button Digital Switch

4-Button Digital Switch

4-Button Digital Switch

MT Ceiling Mount OS

Photocell

GreenMAX Relay System

GreenMAX Relay System

MT Ceiling Mount OS

MT Ceiling Mount OS

MT Ceiling Mount OS

Keyswitch Digital Switch

PROBLEM: Large commercial space has areas that must be controlled independently, and each room has areas that may need to be segregated by zone for customizable control. The length and amount of wire needed to bring all room controls to one centralized location would be labor and cost-prohibitive.

SOLUTION: GreenMAX allows large areas, or rooms divided into zones, to be centrally controlled. Pre-programmed Behaviors can be set in advance to control rooms on common-use settings or for separate circumstances such as closures and breaks.

- Rooms are equipped with photocells and occupancy sensors to achieve optimal daylight harvesting
- Using the sensors and switches allows shorter and less expensive wiring options
- Incorporating smaller panels allows for less wiring and lower installation and maintenance costs
- Centralized control for time-settings; ready to integrate with building automation systems
- **Ideal Applications:** Office buildings, schools, college campuses, municipal buildings, airports

SOLUTION REQUIREMENTS

PRODUCT	QUANTITY
GREENMAX RELAY SYSTEM COMPONENTS	
GreenMAX Relay Cabinet, 8-Relay Size R08TC-100	4
GreenMAX Main Command Module RPM16-116	4
GreenMAX Relay Insert Panels, 8-Relay Size R0800-000	4
GreenMAX Dimming Relays RELAY-1DS	32
GREENMAX EXTERNAL SYSTEM COMPONENTS	
GreenMAX Handheld Display Unit (HDU) RHDUI-000	1
GreenMAX Digital Switch, 4-Button RDGSW-4DW	4
GreenMAX Digital Switch, 1-Button RDGSW-1DW	4
GreenMAX Digital Switch, Keyswitch RGDSW-1KS	1
Multi-Technology Ceiling Mount Occupancy Sensor OSC20-M0W	6
Photocell ODC0P-0DW	2

DISTRIBUTED CONTROL

Flexibility, cost-effectiveness and energy efficiency are the goals of Leviton's Distributed Control Solutions. Sector Intelligent Digital Lighting Control Systems and SectorFlex integrates scheduling, daylight harvesting, occupancy sensing, dimming and manual control into an intelligent digital lighting control system. Sector and SectorFlex systems are easy to design, install and program and provide energy savings and increase occupant comfort and productivity.

BEST SOLUTION
SECTOR BALLAST INDIVIDUAL CONTROL

Sector Ballast

Sector Photocell

Sector Multi-Tech Ceiling Sensor

Sector 5-Button Switch

Sector 5-Button Switch

Sector Bus Controller

Sector Multi-Tech Ceiling Sensor

Sector Photocell

Sector 5-Button Switch

Sector 5-Button Switch

Sector Multi-Tech Ceiling Sensor

Sector Multi-Tech Ceiling Sensor

Sector Multi-Tech Ceiling Sensor
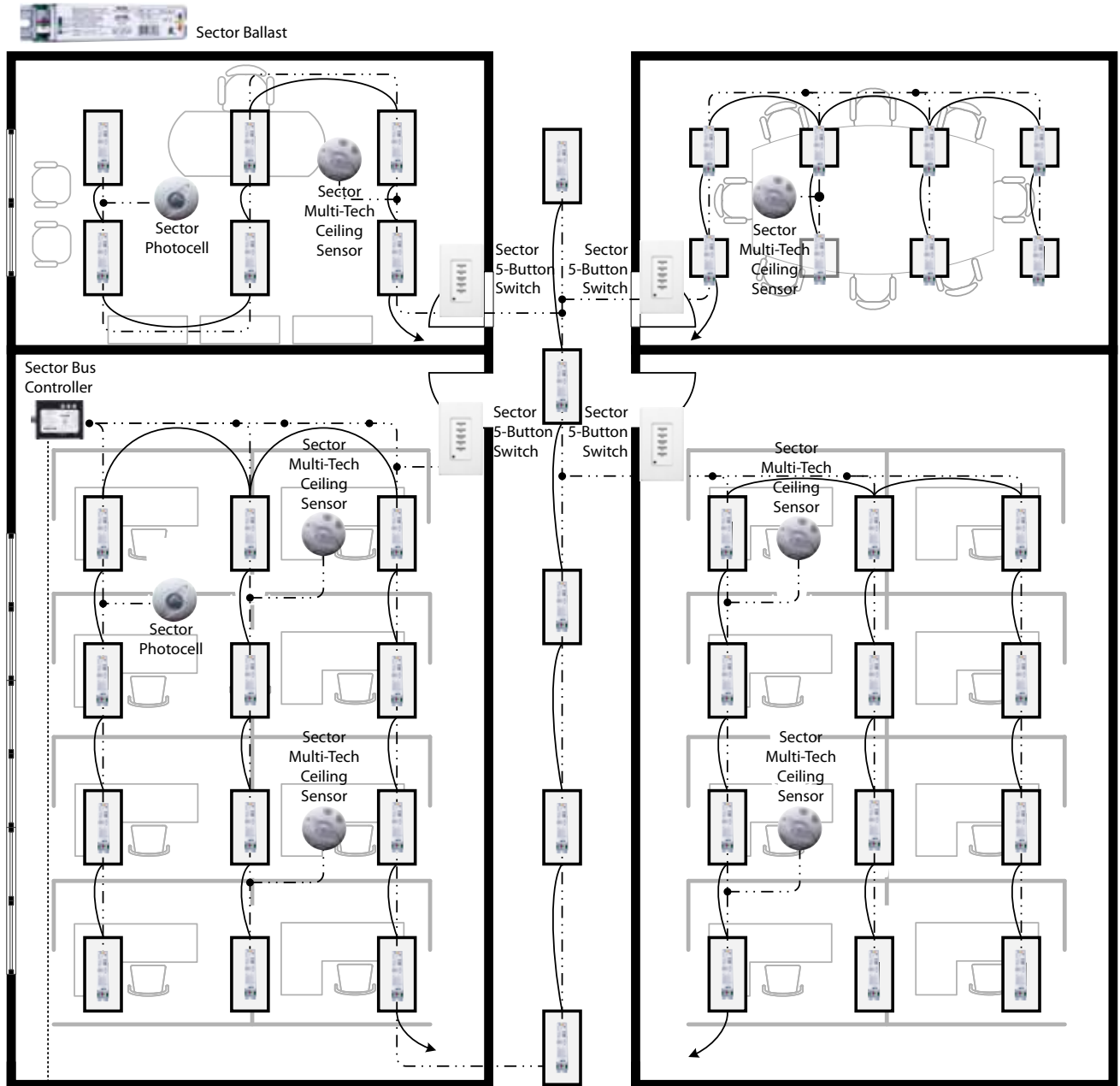
PROBLEM: New construction is beginning on a facility that will have multiple uses, and may be configured in different ways in the future based on changing tenants. Each room will be used in unique ways: there will be some cubicle areas where users would prefer to control lights directly above and around them, and other areas where overhead lights should be controlled as one seamless unit.

SOLUTION: The Sector solution includes 0-10V ballasts, controllers, occupancy sensors, photocells and switches and a GUI software for a scalable solution for a variety of facilities. Leviton's Sector ballasts can be controlled at any level, from an entire room or facility to individual lighting loads. Individual control allows occupants to control their light from their personal computer, and also frees up a space to be used in various, evolving ways. For example, a large open space can be built with Sector implemented for a retail application, but in the future easily reconfigured for smaller offices and shops. The fixtures can be programmed to work together within the newly defined space with a few clicks using the GUI software.

- Leviton's Sector ballasts measure energy usage in each fixture, allowing facility managers to view actual use and plan energy management strategies and conservation efforts accordingly
- Vary zones of light to any scale, large or small, and change at any time without needing to switch out hardware. One investment saves on numerous material and labor costs, presenting a superior value to facilities
- Sector combines daylight harvesting technologies with occupancy sensing and manual control, offering a solution which encompasses all major energy-saving technologies: occupancy sensing, dimming and switching, daylight harvesting and manual overrides
- **Ideal Applications**: Newly constructed schools, college campuses, office buildings, commercial spaces, shopping malls, airports and other commercial facilities

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	Sector Ballasts SD2J8-32M	43
	Sector Bus Controller SBP00-00M	1
	Sector Digital Switch, 5-Button SDS00-15W	4
	Sector Multi-Technology Ceiling Mount Occupancy Sensor OSC20-MSW	6
	Sector Photocell ODC0P-0SW	2

BEST SOLUTION
SECTORFLEX ZONAL LIGHTING CONTROL

Sector Ballast Controller

Sector Photocell

Sector Multi-Tech Ceiling Sensor

Sector 2-Button Switch

Sector 2-Button Switch

Sector 2-Button Switch

Sector Bus Controller

Sector 5-Button Switch

Sector 5-Button Switch

Sector Multi-Tech Ceiling Sensor

Sector Photocell

Sector Multi-Tech Ceiling Sensor

Sector Multi-Tech Ceiling Sensor

Sector Multi-Tech Ceiling Sensor

PROBLEM: Existing facility desires the flexible features of the Sector system to control overhead lighting by zones, but the building has existing non-Sector ballasts. Replacing all ballasts would be cost-prohibitive.

SOLUTION: The SectorFlex solution contains all of the flexibility and features of Sector into a system that can be implemented with any 0-10V ballast or load. This makes SectorFlex ideal for retrofit projects where ballasts already exist. Ballasts can later be upgraded to Leviton Sector ballasts to allow for energy usage tracking. SectorFlex allows the integration of the Sector system without completing an entire overhaul of a structure's existing ballast systems currently in place.

- Controls lighting areas by zones with the ability to add and merge zones as lighting needs evolve
- Contains all of the flexible options of Sector without requiring immediate replacement of existing ballasts
- **Ideal Applications:** Retrofit applications such as hotels, schools, universities, hospitals, airports, and other pre-existing structures

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
	Sector Ballast Controller SBCS0-L00	15
	Sector Bus Controller SBP00-00M	1
	Sector Digital Switch, 5-Button SDS00-15W	2
	Sector Digital Switch, 2-Button SDS00-12W	4
	Sector Multi-Technology Ceiling Mount Occupancy Sensor OSC20-MSW	5
	Sector Photocell ODC0P-0SW	2

HYBRID CONTROL

Some facilities require an even deeper level of customization to meet unique needs and specific goals. Leviton's systems can be designed to work together to meet any application need as hybrids of Occupancy Sensing, Room Control, Centralized and Distributed Control Solutions.

BEST SOLUTION

GREENMAX DIMMING/SWITCHING WITH REMOTE LOW VOLTAGE CABINET AND LEVNET RF

PROBLEM: Facility requires a deeper level of customization to retrofit existing areas with a minimally-invasive system. They also desire a high level of programming precision to centralize control and set lighting on Behavior schedules.

SOLUTION: By adding a Remote Low Voltage Panel to a GreenMAX configuration, facilities can incorporate low voltage components such as LevNet RF energy harvesting solutions to monitor room occupancy and daylight harvesting. Combining the two systems blends the wireless convenience and easy installation of LevNet RF with the advanced Behavior programming and zonal control of GreenMAX.

- Multiple zones controlled by occupancy, ambient light or pre-programmed Behaviors
- Centralized control of multiple systems reduces maintenance costs
- Ideal Applications: Restaurants, classrooms and commercial spaces
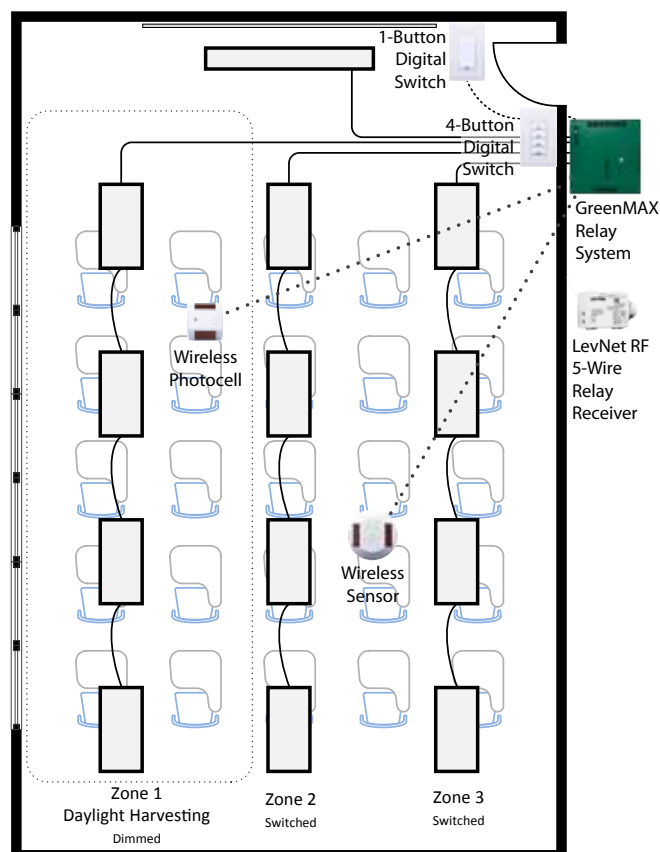
1-Button Digital Switch

4-Button Digital Switch

GreenMAX Relay System

LevNet RF 5-Wire Relay Receiver

Wireless Photocell

Wireless Sensor

Zone 1 Daylight Harvesting *Dimmed*

Zone 2 *Switched*

Zone 3 *Switched*

SOLUTION REQUIREMENTS

	PRODUCT	QUANTITY
GREENMAX RELAY SYSTEM COMPONENTS		
	GreenMAX Relay Cabinet, 16-Relay Size R16TC-116	1
	GreenMAX Main Command Module RPM16-110	1
	GreenMAX Relay Insert Panels, 8-Relay Size R0800-000	1
	GreenMAX Dimming Relays RELAY-1DS	8
GREENMAX EXTERNAL SYSTEM COMPONENTS		
	GreenMAX Handheld Display Unit (HDU) RHDUI-000	1
	GreenMAX Digital Switch, 4-Button RDGSW-4DW	1
	GreenMAX Digital Switch, 1-Button RDGSW-1DW	1
	LevNet RF Energy Harvesting Sensor WSC04-IRW	1
	LevNet RF Energy Harvesting Photocell WSCPC-00W	1
	LevNet RF 5-Wire Relay Receiver WST02-R10	1

METERING SOLUTIONS

Leviton Metering Solutions enhance any Application Solution by allowing facilities to accurately track actual energy usage. By measuring energy usage over days, weeks and months, trends can be identified and the effectiveness of conservation efforts can be proven.

Implementing a submetering strategy in your facility is simple, and with Leviton's options, scalable to your project's needs. Start your solution with Leviton Metering Kits, which include the meter (indoor or outdoor) and required current transformers. Make translation of data easy with our Energy Management Hub (EMH) and Energy Management Software, which translates data collected from meters into user-friendly, real-time reports. Leviton helps facilities implement a metering solution that fits any project's needs, regardless of size or requirements.

Consultative Approach Leviton believes that no customer is identical, and each project has unique considerations to provide equipment that will yield the most effective results. Finding the right match for each client, versus a blanket solution, ensures that each project gets exactly the equipment it needs—no more, no less.

Open Protocol By designing open protocol products and operating systems, Leviton ensures ease of communication between multiple parties and platforms. The result is scalable, streamlined solutions that are easy to integrate with new and existing systems.

Scalable System Leviton Metering Solutions can be implemented as an entire solution or in stages, based on the project and the customer's needs for ease and flexibility. Options for future upgrades and additions are available with Leviton's flexible solution—no need to purchase an entire new system, adding long-term value and cost savings.

LEVITON METERING SOLUTIONS DELIVER ACCURATE INFORMATION FOR:

- Load profiling and benchmarking
- Tenant cost allocation
- Measurement and verification (M & V)
- Energy conservation and cost reduction
- Green building initiatives and Government mandates
- AMR/BAS/BMS/EMS integration
- Power Quality Analysis
- Usage aggregation

See the Metering Solutions section for more information on product offerings.

SAVES ON ENERGY COSTS

Lighting energy consumption has climbed to over 38% of all energy used in today's commercial facilities. With rising energy costs and its mounting environmental impact, turning lights OFF in unoccupied spaces is a necessity. One of the best ways to ensure that energy is not wasted is by installing occupancy sensors..

An E Source survey, focusing only on the addition of occupancy sensors, highlights the significant energy savings their adoption can provide

TYPICAL SAVINGS WITH OCCUPANCY SENSORS

TYPE OF ROOM	ENERGY SAVINGS %
Private Office	13 to 15%
Open-Plan Office	20 to 28%
Classroom	40 to 46%
Conference Room	22 to 65%
Bathrooms	30 to 90%
Corridors	30 to 80%
Storage Area	45 to 80%

E Source Purchasing Advisor, 2009

According to a Midwest Energy Efficiency Alliance study, their cost-saving potential is considerable:

ANNUAL LIGHTING ENERGY COST ($/SQ.FT.)

Lighting Design Saves 20% equal to 8 cents/ ft^2

Daylight Harvesting Controls Save 35% equal to 13 cents/ ft^2

Occupancy Sensors Save 18% equal to 6 cents/ ft^2

Source: Midwest Energy Efficiency Alliance
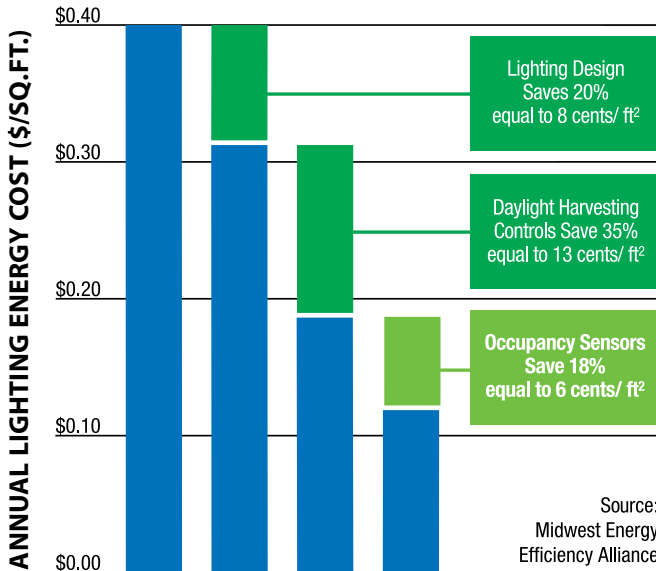
SAVES ON MATERIAL AND LABOR COSTS

A study by the Electrical Power Research Institute found that while the increased ON/OFF switching by occupancy sensors reduced fluorescent lamp life from 34,000 to 30,000 hours, it also dramatically increased lamp longevity for always-on lamps from 3.9 years to 6.8 years by not wasting lamp life during unoccupied hours. Though the energy savings from occupancy sensors remains their most compelling feature, the reduced frequency of lamp replacement over time and the associated decline in maintenance costs can also provide significant savings. Their ease of installation makes their use a cost effective and viable energy saving alternative in both new construction and retrofit applications.

SAVE ON ENERGY CODE COMPLIANCE COSTS

The need to optimize building energy performance has resulted in a variety of mandatory energy codes. Occupancy sensors provide a very cost-effective means of compliance with these codes. They also offer an easy way to achieve higher levels of voluntary certification for implementation of energy saving measures, resulting in potential income tax credits for building owners or tenants who meet these "green" standards.

ASHRAE 90.1-2010 ENERGY STANDARD

- Requires occupancy sensors that turn lights OFF within 30 minutes after a space is vacated as one solution for required automated shut OFF of lights in commercial buildings greater than 5000 square feet.

- Occupancy sensors required:
    - In certain non K-12 classrooms
    - Conference/meeting rooms
    - Employee lunch and break rooms (if no multi-scene control is in place)
    - Copy and print rooms
    - Office spaces up to 250 square feet
    - Restrooms, locker and fitting rooms

IECC 2012 LIGHTING CONTROL PROVISIONS

- Used by government agencies to formulate requirements for minimum energy efficiency in commercial building design.

- Section 805.2.2.1 allows occupancy sensors to be used in open areas as an alternative to a provision requiring manual control that uniformly reduces lighting by at least 50%.

CALIFORNIA ENERGY COMMISSION (CEC) TITLE 24 PROGRAM

The California Energy Commission (CEC) original Title 24 program applies to nonresidential and residential high-rise buildings as well as hotel/motel occupancies. Key provisions now in effect include:

A. Area Controls: An occupancy sensor that turns lights off within 30 minutes after the space is vacated for all areas enclosed by ceiling height partitions

B. Multi-Level Lighting Controls: General lighting for any enclosed space 100 sq. ft. or larger where connected lighting load exceeds 0.8 watts per sq. ft. for the space and has more than one light source shall have at least one control step that is between 50% and 70% and allow the power of all lights to be manually turned OFF (Occupancy sensors that switch alternate rows of lighting fixtures based on occupancy are a possible solution)

C. Shut-off Controls: For every floor, all interior lighting must have a separate automatic control – an occupancy sensor or some other device – capable of automatically shutting off the lighting. Occupancy sensor is required for Offices ≤ 250 sq. ft.; Multipurpose room < 1000 sq. ft.; Classrooms of any size; Conference rooms of any size. Shall allow lights to be manually shut off regardless of sensor status

D. New Single and Low-Rise Residential Structures: Bathroom, garage, laundry room, utility room and outdoor lighting in single residences as well as lighting in common areas of low-rise residential buildings with four or more dwelling units must be from high-efficacy luminaires. If luminaires are used in these locations that are not high efficacy, occupancy sensors must control them. Lighting in other areas of residential buildings that is not from high-efficacy luminaires is only permitted if controlled by either a dimmer switch or an occupancy sensor

E. Demand Responsive Lighting Controls: Retail buildings with sales floor areas > 50,000 sq. ft. require automatic demand responsive lighting controls; uniformly reduce lighting power consumption ≥ 15%; Exception: Buildings where > 50% lighting power is controlled by daylighting controls

LEED VOLUNTARY CERTIFICATION PROGRAM

- Voluntary program developed and administered by the U.S. Green Buildings Council (USGBC)

- Four-tiered rating and certification system

- Focus on daylight harvesting to reduce a building's operating costs and occupancy sensors for better control of lights and HVAC systems

- LEED requires compliance with ASHRAE and as such occupancy sensors are required

EPACT (ENERGY POLICY ACT OF 2006)

- Tax incentives for buildings that reduce lighting energy below ASHRAE 90.1-2004 by at least 25% with sliding scale up to 50% savings

- Must comply with ASHRAE 90.1-2001 plus additional bi-level lighting control, which can be met with dual-relay occupancy sensor and dimming

For more information, visit leviton.com/cenergycodes

ABOUT SENSING TECHNOLOGIES

Passive Infrared (PIR)

Infrared occupancy sensors are passive devices designed to detect the movement of heat-emitting bodies. They are installed to monitor areas where there are no physical obstructions to block the sensor's field of view.

Ultrasonic (US)

Ultrasonic sensing technology provides highly accurate small-motion detection. Leviton sensors employing ultrasonic technology are well suited to monitoring areas, especially smaller or narrow ones, with inanimate objects (such as furniture) that block the line of site and hence are likely to block the field of view of PIR sensors. They are also ideal where more sensitive detection is required.

Multi-technology

Multi-technology occupancy sensors combine ultrasonic sensing for maximum sensitivity with PIR technology to prevent false triggers from air conditioning and corridor activity. These sensors are ideal for large, open areas including office areas with cubicles, general workspaces, warehouse and storage facilities, cafeterias, and public areas in commercial facilities.

Adaptive Definition

A dedicated internal microprocessor continually analyzes the room environment and adjusts itself automatically. The internal timer, detection sensitivity and thresholds are automatically adjusted. Once installed, a sensor incorporating adaptive technology should not require manual adjustment or calibration.

OCCUPANCY SENSOR INSTALLATION TYPES AND TIPS

Passive Infrared (PIR) Occupancy Sensors

- Use a semiconductor to sense movement of infrared heat from the human body
- Require an unobstructed line-of-sight for accurate detection—any furniture or decorations that block the sensor's view will prevent occupant's movement from being "seen"
- Respond to larger movements than ultrasonic sensors
- Work best in small, enclosed areas with high levels of occupant motion
- Locate PIR sensors with a clear line-of-view of the area to be covered, perpendicular to the likely movement
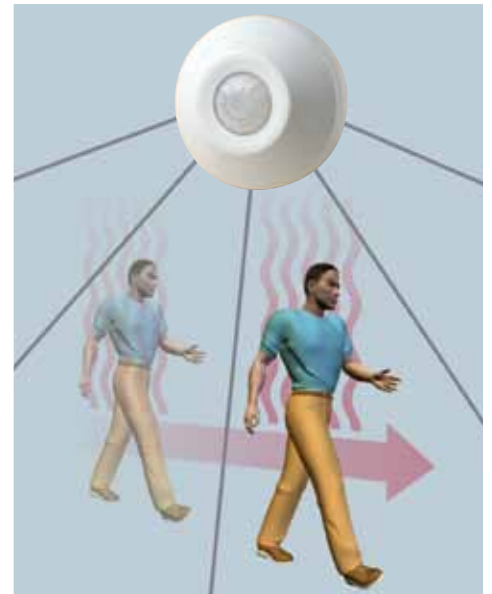
Ultransonic (U/S) Occupancy Sensors
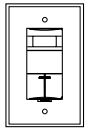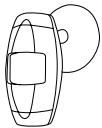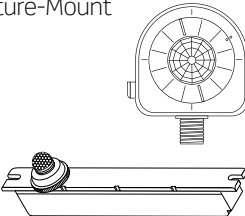
- Continually transmit ultrasonic sound waves and respond to shifts in position of a person relative to the sensor (doppler shift), and do not require an unobstructed line-of-sight
- More effective at sensing motion around corners and in cubicles, and locations where only small amounts of motion are taking place
- Since U/S sensors are omni-directional, locate sensors away from doorways, room openings or adjacent areas, or closer than 6 feet of HVAC ducts to avoid unwanted sensing of motion
- Carpeting, partitions and ceiling tiles will absorb U/S raves and reduce range, while hard surfaces such as tile or metal will increase sensitivity
- Most effective when mounted 8 feet or lower

Multi-Technology Occupancy Sensors

- Combine PIR and U/S technology to provide the most reliable detection means possible, with PIR's long-range detection and U/S high sensitivity
- Must be located with an unobstructed line-of-sight view of a room's entrance
- Must be located at least 6 feet from HVAC ducts
- Locate where small-motion work occurs, such as desks and workstations

ABOUT DIFFERENT SENSOR DESIGNS

Sensor Type		When to Use
Wall Switch		This sensor replaces an existing wall switch. Get both occupancy sensing and manual on/off switching in a single device.
Ceiling-Mount		For 180° or 360° coverage of an area (360° sensor shown).
Wall-Mount		For coverage of irregularly shaped areas and those with varying ceiling heights, as well as narrow hallway and high-bay corridor applications. For detection in spaces outside the field of view of other occupancy Adjustable swivel neck rotates 80° vertically and 60° horizontally to allow wall or ceiling mount installation.
Fixture-Mount		For mounting on or in fixtures.

SELECTION & PLACEMENT

Sensors can be mounted in the middle of walls, in corners, or on ceilings. Occupancy sensors must be intelligently placed in order to ensure that motion is detected throughout an entire space. With a variety of models from which to choose, care should be taken to select the proper combination of sensors to cover an entire area with motion detection.

Factors to consider before selecting and placing an occupancy sensor include:

• Size and shape of area needing coverage compared to ranges of occupancy sensors

• Obstacles that may block the sensor's line of sight

• How much activity there is in a space

• Ceiling height

• Airflow that can falsely register as motion

• Location of HVAC ducts

Leviton's Lighting Management Systems Division provides a complimentary occupancy sensor layout service. This service provides suggested sensor selection and placement on a customer's drawings in either paper or electronic form, along with a bill of material detailing the components necessary for that layout. Register for this complimentary service at http://portal.leviton.com.

UNDERSTANDING SENSOR CATALOG NUMBERS

First 2 Letters	3rd Character: type of product	Last 2 Characters	–	1st Character of Suffix: sensor technology	2nd Character of Suffix: voltage	3rd Character of Suffix: color
OS = Occupancy Sensor OD = Occupancy Detector WS = Wireless Sensor	C = Ceiling Mount W = Wall Mount P = Power Pack A = Add-A-Relay S = Switch Mount F = Fixture Mount D = Dimmer G = Plug R = Room Controller 0 = N/A	02 = 200sf or 2A 04 = 400sf or 4A 05 = 500sf or 5A 10 = 1000sf or 10A 12 = 1200sf or 12A 15 = 1500sf or 15A 20 = 2000sf or 20A 0D = Dual relay 0S = Self-contained CG = Cage HU = High Bay LR = Long Range MD = Multi-Tech Dual Relay MT = Multi-Tech Single Relay RA = Raceway Adapter WV = Wide View		F = 10 min delayed-OFF for 2nd relay G = Neutral not required I = Infrared M = Multi-technology R = Relay (HVAC) P = Self-powered T = CEC Title 24 Compliant, 2nd Relay U = Ultrasonic 0 = N/A	1 = 120V 2 = 230V 3 = 347V 4 = 480V 7 = 277V 8 = 240V D = 120-277V U = Universal N = NAFTA/ Buy America* 0 = N/A	W = White I = Ivory T = Light Almond G = Gray E = Ebony/Black R = Red 0 = N/A

*Contact Leviton for NAFTA/Buy America compliant occupancy sensors.

ENERGY HARVESTING SENSORS

LevNet RF Energy Harvesting Sensors are part of LevNet RF's complete line of wireless solutions. The wireless occupancy sensors have built-in solar cells that draw on available ambient light within a space to power themselves and can operate for up to 48 hours in total darkness. The self-powered wireless sensor design also overcomes the placement and coverage challenges of traditional sensors. Self-powered wireless sensors enable flexible placement allowing sensors to be mounted wherever needed without the complexity of moving or installing new wiring.

SPECIFICATIONS & FEATURES

• Zero Power Consumption: Solar power provides the energy to keep the device on and sensor technology turns the lights off, eliminating additional expenses to the end user's energy bill

• Zero External Power Required: With no power wire limitations, this enables the installer to place the sensor in the optimal location of any application to capture minor motion and reduce false OFFs

• No Additional Wiring: Self-powered wireless technology eliminates the need to pull additional wire making installation quick and easy and increasing labor savings with little to no impact to business during conversion

• Advanced Field-of-View: Superior detection for parallel and perpendicular motion; innovative technology detects motion moving directly towards the sensor; 360° rotation to fine tune location of solar cells and field-of-view for the most accurate sensing possible

IDEAL USES

• Retrofits, new construction, restrooms, conference rooms, classrooms, private and executive offices and retail spaces

TESTING & CODE COMPLIANCE

• CEC Title 24 Compliant

• FCC Certified for wireless communication

• Backed by a limited five-year warranty

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	COVERAGE	COLOR
LevNet RF Low Profile Self-Powered **PIR** Occupancy Sensor	WSC04-IRW	360°, 450SF	White
LevNet RF Low Profile Self-Powered **PIR** Occupancy Sensor	WSC15-IRW	360°, 1500SF	White
LevNet RF Self-Powered **PIR** Occupancy Sensor	WSC04-IoW	360°, 450SF	White

NOTE: For more information on LevNet RF, see the LevNet RF Energy Harvesting Wireless Solutions section (pages 59-68)

WSC15 Field of View (in feet)

TOP VIEW

Minor Motion
Major Motion

SIDE VIEW
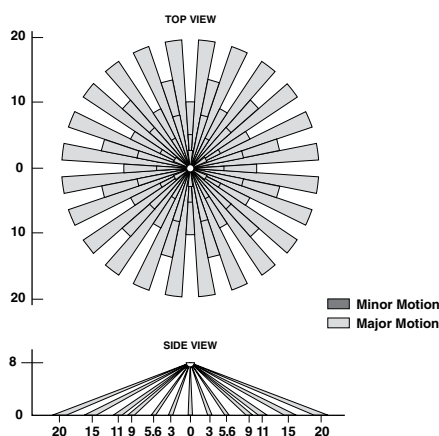
WSC04 Field of View (in feet)

TOP VIEW

SIDE VIEW
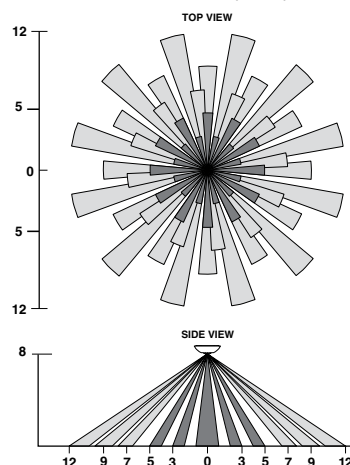
DECORA® WALL SWITCH OCCUPANCY SENSORS

Convenient switch and occupancy sensor combo utilizes Decora® wallplates for sleek aesthetics. Advanced passive infrared technology provides highly accurate monitoring in a variety of commercial and residential applications. The OSSMD and OSSMT Multi-Tech unit combines passive infrared and ultrasonic technologies to provide maximum sensitivity with immunity to false triggering.

SPECIFICATIONS & FEATURES
COMMERCIAL

	ODS10	ODS15	ODS0D-ID	ODS0D-TD	OSSNL	OSSMT-MD	OSSMT-GD	OSSMD-MD	OSSMD-GD	OSSMD-FT
Internal photocell prevents lights from turning on when there is ample natural light (S = self adjusting)	X	S	S	S		X	X	X	X	X
Manual override turns lights on at any time regardless of override setting	X	X	X	X	X	X	X	X	X	X
Dual pushbuttons provide manual ON/OFF switching for 2 separate banks from a single unit			X	X				X	X	X
Exclusive automatic "walk-through" sensing increases energy savings by shutting lights within 2-1/2 minutes after momentary occupancy		X	X	X		X	X	X	X	X
Unit beeps to indicate load is going to be switched off automatically	X		X	X						
Choice of "Conference Room" or "Classroom" modes for maximum performance and energy savings in a variety of installations			X							
Manual delayed-off-time settings: 10, 20, and 30 minutes, with 30-second test mode	X	X	X	X		X	X	X	X	X
Manual delayed-off-time settings: 30 seconds, 30 minutes, 1 hour, 2 hours					X					
10 minute delayed-OFF on 2nd relay										X
Three-position service switch with off, auto, on		X	X	X						
Single-pole and 3-way wiring						X	X	X	X	X
Elegant Decora wallplates complement any interior for sleek aesthetics	X	X	X	X	X	X	X	X	X	X
Fits in standard wallbox; units may be ganged	X	X	X	X	X	X	X	X	X	X
Neutral Wire not required for retrofit installations	X	X	X	X				X		X
Night Light mode or "Guide Light" feature					X					
Night Light dim feature					X					
Patented adjustable integral blinders with 180° to 32° field-of-view	X	X	X	X	X	X	X	X	X	X
Vandal resistant	X	X	X	X	X	X	X	X	X	X
Manual ON/Auto OFF operation for CEC Title 24 compliance	X	X	X	X		X	X	X	X	X

IDEAL USES

ODS10-ID — Enclosed areas: small offices, conference rooms, storage rooms, copy rooms, closets
ODS15-ID — Commercial areas: small offices, conference rooms, classrooms, stockrooms, lounges, restrooms, warehouses
ODS0D-ID/ODS0D-TD — Classrooms, multimedia and conference rooms, day care centers, office, lounges
OSSNL — Hotel restrooms, hospital restrooms, conference rooms, class rooms, small offices, lounges, storage areas, and bathrooms
OSSMD — Bi-level offices, partitioned areas, bathrooms
OSSMT — Private and executive offices, conference rooms, storage areas, restrooms, classrooms, lounges, and training areas

TESTING & CODE COMPLIANCE

• UL and cUL Listed (ODS10, ODS15, ODS0D-ID, ODS0D-TD, OSSNL and OSSMT-MD)
• ETL and cETL Listed to UL 508 and CSA C22.2 No. 14 (OSSMT-GD, OSSMD-MD, OSSMD-GD, and OSSMD-FT)
• CEC Title 24 compliant (ODSXX-, and OSSMX models) and meets ASHRAE Standard 90.1 requirements
• Backed by a Limited Five-Year Warranty

Exclusive dual PIR sensors detect IR signal

Patented adjustable blinders block peripheral signals

Vandal resistant Fresnel lens for optimal field of view

Time, range and light adjustments

Photocell detects light to enable energy-saving ambient light override

ODS10-ID shown

Ground clip to ensure solid connection

Push button for manual on/off

LED indicator flashes when sensor detects motion
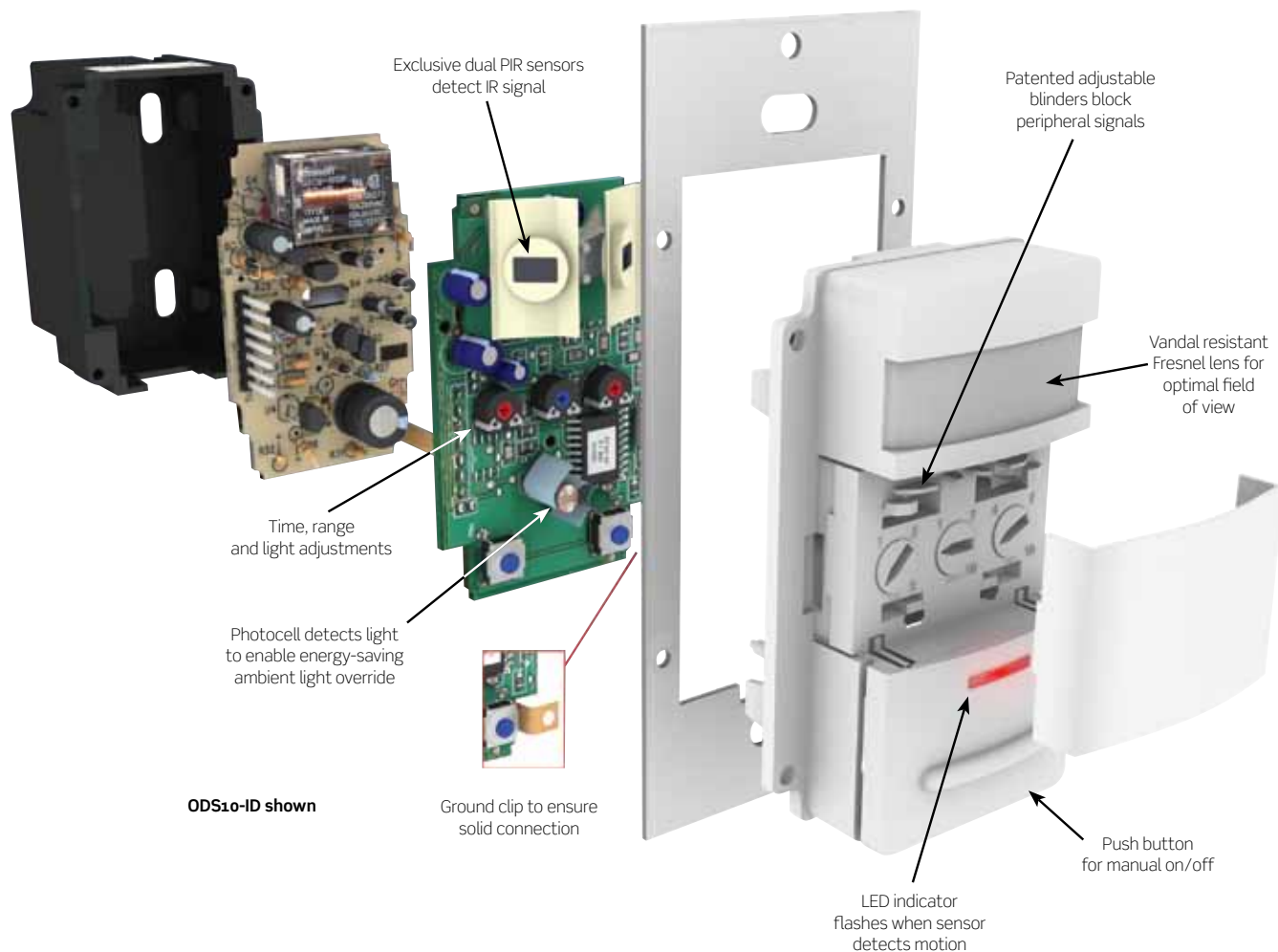
SPECIFICATIONS & FEATURES
RESIDENTIAL

	IPP15	PR150	PR180
Ambient light override prevents lights from turning on when there is ample natural light (S = self adjusting)		X	X
True 3-way occupancy sensing when used with IPP0R	X		
Manual override turns lights on at any time regardless of override setting	X	X	X
Manual delayed-off-time settings: 10, 20, and 30 minutes, with 30-second test mode	X		
Manual delayed-off-time settings: 15 seconds to 15 minutes		X	X
Single-pole and 3-way wiring*	X		
Elegant Decora wallplates complement any interior for sleek aesthetics	X	X	X
Fits in standard wallbox; units may be ganged	X	X	X
Patented adjustable integral blinders with 180° to 32° field-of-view	X		
Vandal resistant	X		
Manual ON/Auto OFF operation for CEC Title 24 compliance	X		

*When used with IPP0R or Vizia +® Remote.

IDEAL USES

IPP15 — Kitchen, bathrooms, laundry rooms and garages or any odd shaped or large room when used with IPP0R
PR150-1L — Wide variety of residential applications
PR180-1L — Large rooms, home offices, and a variety of light commercial and residential applications

TESTING & CODE COMPLIANCE
• UL Listed
• CSA Certified
• CEC Title 24 compliant (IPP15 models) and meets ASHRAE Standard 90.1 requirements
• Backed by a Limited Five-Year Warranty

DECORA WALL SWITCH INFRARED VACANCY AND OCCUPANCY SENSORS

COMMERCIAL GRADE[+]

DESCRIPTION	CAT. NO.	RATING	COVERAGE	COLOR*
Decora Wall Switch **PIR** Occupancy Sensor	ODS10-ID	Incandescent: 800W @ 120V. Fluorescent: 1200VA @ 120V, 2700VA @ 277V. For 60Hz AC only. Motor: 1/4HP @ 120V	180°, 2100SF	W, I, T, G, E, R
Decora Wall Switch **PIR** Occupancy Sensor with Self-Adaptive Technology	ODS15-ID	Incandescent: 1800W @ 120V. Fluorescent: 1800VA @ 120V, 4000VA @ 277V. 50/60Hz. Motor: 1/4HP @ 120V	180°, 2100SF	W, I, T, G, E
Decora Dual-Relay Wall Switch **PIR** Occupancy Sensor with Self-Adaptive Technology. Default setting = Conference Room mode, alternate setting = Classroom mode**	ODS0D-ID	Primary Relay–Fluorescent: 1200VA @ 120V, 2700VA @ 277V; Incandescent: 800W @ 120V. Secondary Relay–Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V. 50/60Hz.	180°, 2100SF	W, I, T, G, E, R
Decora Dual-Relay Wall Switch **PIR** Occupancy Sensor with Self-Adaptive Technology. Secondary relay provides manual ON only for CEC Title 24 compliance	ODS0D-TD	Primary Relay–Fluorescent: 1200VA @ 120V, 2700VA @ 277V; Incandescent: 800W @ 120V. Secondary Relay–Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V. 50/60Hz.	180°, 2100SF	W, I, T, G, E
Decora Wall Switch **PIR** Occupancy Sensor with LED Night Light	OSSNL-ID	Incandescent: 800W @ 120V. Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4 HP @ 120V	180°, 2100 SF	W, I, T, G, E
Protective Cage for Wall Switch Sensors	OSWWG-POW	—	—	W

RESIDENTIAL GRADE

DESCRIPTION	CAT. NO.	RATING	COVERAGE	COLOR*
Decora Manual-ON Vacancy Sensor, CEC Title 24 Compliant. Single-Pole, 3-Way or more when used with IPP0R Remote and/or Vizia +® Remote Dimmers and Remote Switches	IPP15-1L	Incandescent: 1800W. @ 120V. Fluorescent: 1800VA @ 120V. Motor: 1/4HP @ 120V	180°, 900SF	W, I, T, E
Decora Manual-ON Vacancy Sensor Remote. For use with IPP15 Sensor or Vizia +® Dimmers.	IPP0R-1L	120VAC–No load rating. For use with IPP15 or Vizia +® Dimmers	180°, 900SF	W, I, T
Decora Wall Switch **PIR** Occupancy Sensor, Single-Pole	PR150-1L	Incandescent: 500W. Fluorescent: 400VA rapid start magnetic only @ 120VAC. Motor: 1/8HP @ 120VAC	150°, 350SF	W
Decora Wall Switch **PIR** Occupancy Sensor, Single-Pole, 3-Way	PR180-1L	Incandescent: 500W. Fluorescent: 400VA rapid start magnetic only @ 120VAC. Motor: 1/8HP @ 120VAC	180°, 400SF	W, I

DECORA WALL SWITCH MULTI-TECHNOLOGY OCCUPANCY SENSORS

COMMERCIAL GRADE[+]

DESCRIPTION	CAT. NO.	RATING	COVERAGE	COLOR*
Decora Wall Switch **Multi-Technology** Occupancy Sensor with Self-adaptive Technology	OSSMT-MD	Incandescent/Tungsten: 800W @ 120V. Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4HP @ 120V	180°, 2400 SF	W, I, T, G, E, R
Decora Wall Switch **Multi-Technology** Occupancy Sensor. No neutral wire required for installation.	OSSMT-GD	Incandescent/Tungsten: 800W @ 120V. Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4HP @ 120V	180°, 2400SF	W, I, T, G, E, R
Decora Dual-Relay Wall Switch **Multi-Technology** Occupancy Sensor	OSSMD-MD	Primary Relay: Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Incandescent: 800W @ 120V. Secondary Relay–Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V. Motor: 1/4HP @ 120V	180°, 2400SF	W, I, T, G, E
Decora Dual-Relay Wall Switch **Multi-Technology** Occupancy Sensor. No neutral wire required for installation.	OSSMD-GD	Primary Relay: Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Incandescent: 800W @ 120V. Secondary Relay–Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V. Motor: 1/4HP @ 120V	180°, 2400SF	W, I, T, G, E
Decora Dual-Relay Wall Switch **Multi-Technology** Occupancy Sensor. 10 minute delayed-OFF on 2nd relay.	OSSMD-FT	Primary Relay: Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Incandescent: 800W @ 120V. Secondary Relay–Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V Motor: 1/4HP @ 120Vc	180°, 2400SF	W, I, T, G, E
Protective Cage for Wall Switch Sensors	OSWWG-POW	—	—	W

* Add to end of catalog number suffix for color of switch: White (W), Ivory (I), Light Almond (T), Gray (G), Ebony (E) and Red (R) available on select models. Wallplates sold separately.
** In Conference Room Mode, both primary and secondary relays respond to ambient light override. In Classroom Mode, primary relay responds only to ambient light override.
Note: See Pages 54-55 for wiring diagrams, Page 40 for dimensioned photos and Page 41 for Field of View
+ Consult with factory for 208, 220, 230, and 240V models.

DECORA WALL SWITCH VACANCY & OCCUPANCY SENSORS DIMENSIONS

1.35
(34.3)

2.60
(66.1)

4.06
(103.2)

1.75
(44.4)

ODS10-ID/ODS15-ID

1.35
(33.6)

2.66
(67.5)

4.11
(104.4)

1.75
(44.5)

ODS0D-ID/ODS0D-TD

1.35
(33.6)

2.66
(67.5)

4.11
(104.4)

1.75
(44.5)
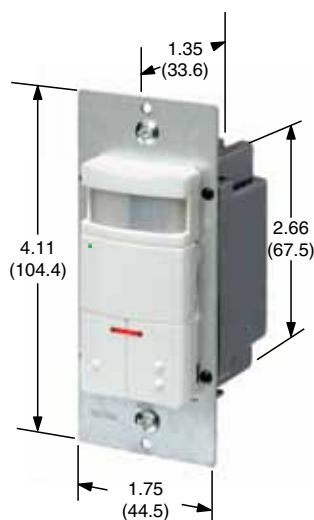
OSSNL-ID
Shown with Night Light ON

1.35
(33.6)

2.66
(67.5)

4.11
(104.4)

1.75
(44.5)
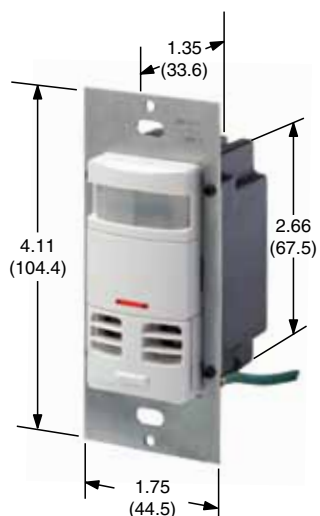
OSSMT-MD/OSSMT-GD/OSSMD-FT
Multi-Tech Sensor

1.35
(33.6)

2.66
(67.5)

4.11
(104.4)

1.75
(44.5)
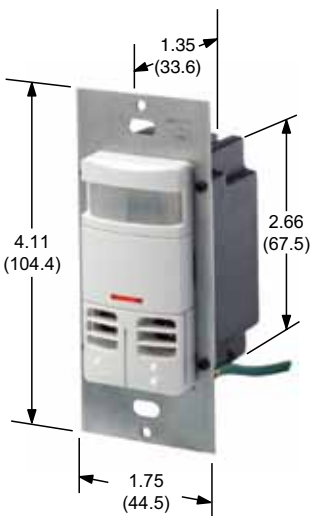
OSSMD-MD/OSSMD-GD
Multi-Tech Dual Relay Sensor

1.46
(35.6)

2.66
(67.5)

4.11
(104.4)

1.75
(44.5)

IPP15

1.35
(34.3)

2.60
(66.1)

4.06
(103.2)

1.75
(44.4)
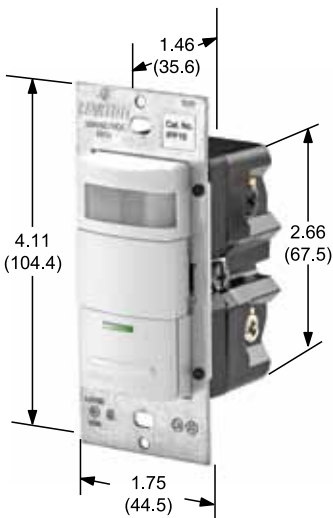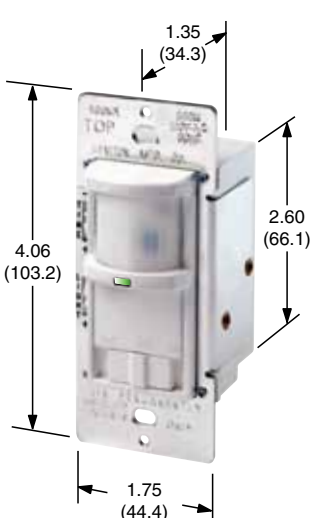
PR150/PR180

DECORA WALL SWITCH VACANCY & OCCUPANCY SENSOR FIELDS OF VIEW

TOP VIEW

SIDE VIEW

☐ Major Motion, IR
■ Minor Motion, IR

OSSXX-ID/ODSXX-ID/ODS0D-TD
Field of View (in feet)

TOP VIEW

SIDE VIEW

☐ Major Motion, PIR   ◯ Major Motion, U/S
■ Major Motion, PIR   ⬭ Major Motion, U/S
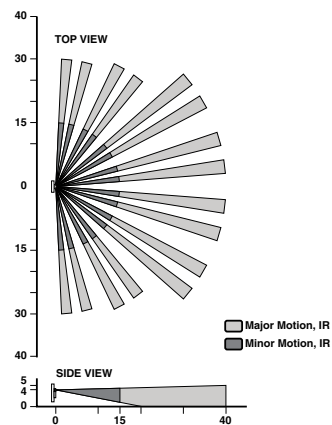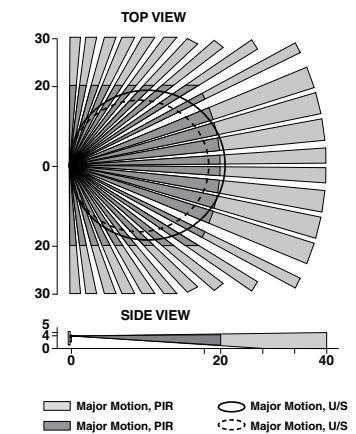
Minor Motion = Dual Technology coverage. This also represents the maximum ultrasonic range coverage.

OSSMD/OSSMT Field of View (in feet)

TOP VIEW

SIDE VIEW
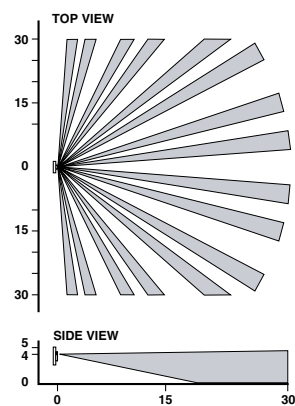
IPP15 Field of View (in feet)

TOP VIEW

SIDE VIEW
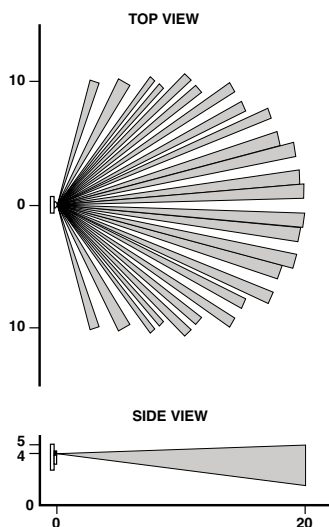
PR150-1L Field of View (in feet)

TOP VIEW

SIDE VIEW
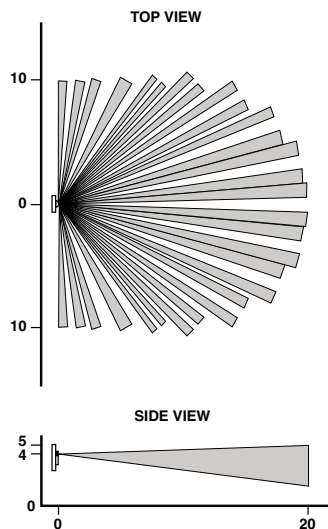
PR180-1L Field of View (in feet)

TOP VIEW

SIDE VIEW
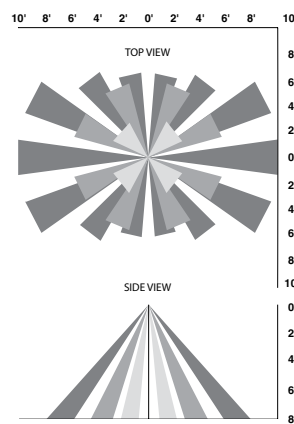
OSF10 Field of View
(in feet)

TOP VIEW

SIDE VIEW
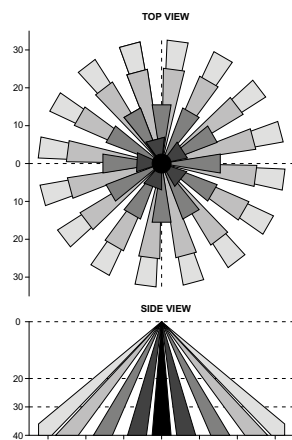
360° High-Bay
(White lens)

TOP VIEW

SIDE VIEW
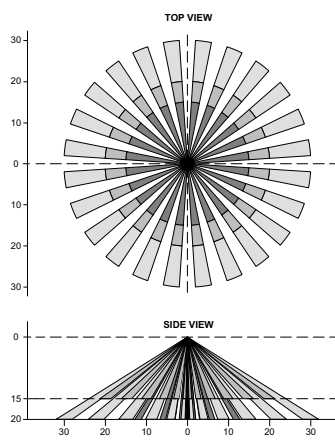
360° Low-Bay
(blue lens)
OSFHU Field of View (in feet)

TOP VIEW

SIDE VIEW

S H E L V E S
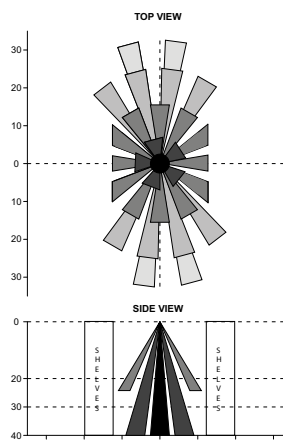
Aisle
(black lens)

SELF-CONTAINED OCCUPANCY SENSORS
SPECIFICATIONS & FEATURES

- Sensor and switching relay combined in a single, self-contained unit—no control unit (power pack) required
- Ambient light override option prevents lights from turning on when there is ample natural light
- ODC and ODW Power Base Combo Sensors combine sensors with the OPB15 Power Base Adaptor to convert low voltage sensors into self-contained line voltage sensors for immediate energy savings
- Adjustable delayed-OFF-time settings from 20 seconds (for test mode) to 15 minutes
- Small, unobtrusive self-contained unit

Ideal Uses
- Storage areas, small bathrooms, copy rooms, and a variety of small spaces without wall switches

2.15
(54.6)

4.30
(109.2)

ODCoS-I1W

TESTING & CODE COMPLIANCE

- UL/cUL Listed
- CEC Title 24 compliant and meets ASHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty
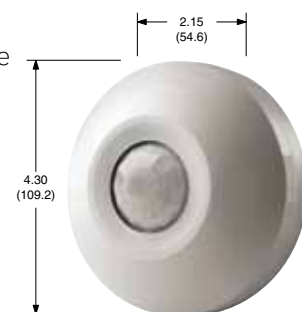
SELF-CONTAINED INFRARED CEILING MOUNT OCCUPANCY SENSORS
COMMERCIAL GRADE

DESCRIPTION	CAT NO.	RATING	COVERAGE	COLOR
Self-Contained Ceiling Mount **PIR** Occupancy Sensor and Switching Relay, 120V	ODCoS-I1W	Incandescent: 1000W @120V. Fluorescent: 1000VA @ 120V. Motor: 1HP @ 120V. For 60Hz AC only	360°, 530SF*	White
Self-Contained Ceiling Mount **PIR** Occupancy Sensor and Switching Relay, 220V	ODCoS-I2W	Incandescent: 1000W @220V. Fluorescent: 500VA @ 220V. For 50Hz AC only	360°, 530SF*	White
Self-Contained Ceiling Mount **PIR** Occupancy Sensor and Switching Relay, 277V	ODCoS-I7W	Fluorescent: 2700VA @277V. For 60Hz AC only	360°, 530SF*	
Protective Cage for Ceiling Mount Sensors	ODCCG-000	-	-	White
Protective Cage for Wall Mount Sensors	OSWCG-PoW			

*When surface mounted on standard, 8-foot ceiling.   Note: See Page 56 for wiring diagrams.

TOP VIEW

13
0
13

SIDE VIEW

8
0
13 7 3 0 3 7 13

ODCoS-I Field of View (in feet)
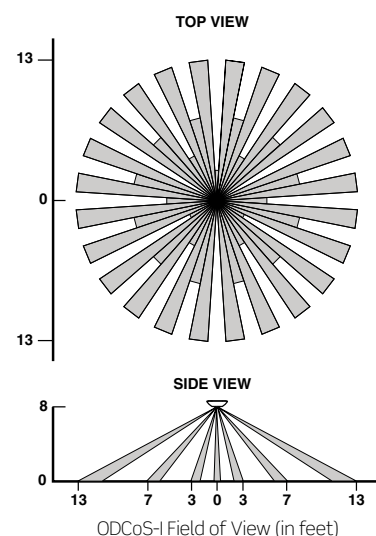
LINE VOLTAGE SENSORS
Low Voltage Sensors with OPB15 Power Base Adaptor Combos

TESTING & CODE COMPLIANCE
• UL/cUL Listed
• CEC Title 24 compliant and meets ASHRAE Standard 90.1 requirements
• Backed by a Limited Five-Year Warranty

COMMERCIAL GRADE

DESCRIPTION	CAT NO.	RATING	COVERAGE	COLOR
Ceiling Mount **Multi-Technology** Occupancy Sensor with Power Base Combo	ODC05-MDW ODC10-MDW ODC20-MDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	500SF 1000SF 2000SF	—
Wall Mount **Multi-Technology** Sensor with Power Base Combo	ODW12-MDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	1200SF	—
Wall Mount Wide-View **PIR** Sensor with Power Base Combo	ODWWV-IDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	115°, 2500SF	—
Wall Mount High Bay **PIR** Sensor with Power Base Combo	ODWHB-IDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	55ft., 7 ft side @ 30 ft high	—
Wall Mount Long Range **PIR** Sensor with Power Base Combo	ODWLR-IDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	100ft., 110° @ 10ft. high	—
Ceiling Mount **PIR** Occupancy Sensor with Power Base Combo	ODC04-IDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	450SF	White
Ceiling Mount **PIR** Occupancy Sensor with Power Base Combo	ODC15-IDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	1500SF	White
Ceiling Mount **Ultrasonic** Occupancy Sensor with Power Base Combo	ODC05-UDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	500SF	White
Ceiling Mount **Ultrasonic** Occupancy Sensor with Power Base Combo	ODC10-UDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	1000SF	White
Ceiling Mount **Ultrasonic** Occupancy Sensor with Power Base Combo	ODC20-UDW	15A, 120V Incandescent; 15A, 277V Fluorescent ballast; Motor: 120V @ 3/4HP, 277V @ 2HP	2000SF	White

SELF-CONTAINED INFRARED FIXTURE-MOUNT HIGH BAY AND INTEGRAL LUMINAIRE OCCUPANCY SENSORS

SPECIFICATIONS & FEATURES

Infrared Fixture-Mount High Bay Occupancy Sensor
- Universal unit includes three interchangeable lenses for 360° high bay, 360° low bay, and aisle way patterns at no additional cost
- Cold storage models for applications as low as -40° F and 480V models available in non-neutral versions
- Mounts directly to industrial-style fluorescent luminaires or electrical junction box
- Self-contained PIR sensor and relay turn individual fixtures ON/OFF based on occupancy
- Up to 40 ft mounting height and quick and easy installation with long 42" leads
- Relay uses zero-crossing circuitry for enhanced reliability and long-life operation
- Bright green LED status indicator blinks to signify that the sensor is functioning properly
- Delayed-OFF time adjustment from 30 sec to 20 min
- Offset Adaptor Accessory snaps into 1/2" knockout to position sensor below fixture body for improved field of view with deep-body fixtures

OSFHU

Infrared Fixture Mount Integral Luminaire Occupancy Sensor
- Easy installation with longer 38" leads allows for easy connection to any ballast eliminating the need to splice additional wiring
- Integrated photocell prevents lights from turning ON when room is illuminated by natural light for maximum energy savings
- 8' to 10' mounting heights
- Adjustable Time Delay and Light Level dials located on sensor housing for easy access

OSFHS

Ideal Uses:
- OSFHU: Commercial facilities with high ceilings, including warehouses, manufacturing, cold storage, and others.
- OSF10: Task lighting, cabinet lighting, cubicles, small bathroom lighting.

TESTING & CODE COMPLIANCE
- UL/cUL Listed • CEC Title 24 compliant • Backed by a Limited Five-Year Warranty

OSF10

COMMERCIAL GRADE+

DESCRIPTION	CAT. NO.	RATING	COVERAGE
Fixture Mount High-Bay **PIR** Sensor with Three Interchangeable Lenses for 360° High-Bay, 360°Low Bay and Aisle Way Coverage	OSFHU-ITW (120-230-277-347V) OSFHU-CTW (cold storage) OSFHU-I4W (480V) OSFHU-C4W (cold storage)	Fluorescent: 800VA @ 120V, 1200VA @ 277V, 1500VA @ 347V, 2400VA @ 480V (OSFHU-x4W models only). 50/60Hz. Motor: 1/4 HP @ 120V	**360° high-bay lens** - 2:1 spacing to mounting height under 20 ft. and 1.5:1 spacing to mounting height @ 40 ft **360° low-bay lens** - 2:1 spacing to mounting height @ 8 ft. to 20 ft. **aisle lens** - 40 ft. long by 20 ft. wide @ 40 ft.
Fixture Mount High-Bay **PIR** Sensor with Three Interchangeable Lenses and Light Sensor, Low Voltage	OSFHP-ILW (24V)	Input: 20mA, Output: 120mA, HVAC: 1A, 30VDC	**360° high-bay lens** - 2:1 spacing to mounting height under 20 ft. and 1.5:1 spacing to mounting height @ 40 ft. **360° low-bay lens** - 2:1 spacing to mounting height @ 8 ft. to 20 ft. **aisle lens** - 40 ft. long by 20 ft. wide @ 40 ft.
Fixture Mount High-Bay **PIR** Sensor with Three Interchangeable Lenses and Light Sensor	OSFHP-ITW (120-230-277-347V) OSFHP-I4W (240-480V) **Dual Relay:** OSFHD-ITW (120-230-277-347V) OSFHD-CTW (cold storage)	Fluorescent: 800VA @ 120V, 1000VA @ 230VAC, 1200VA @ 277VAC, 1500VA @ 347VAC, 2000VA @ 480VAC, 50/60Hz. Motor: 1/4 HP @ 120V	**360° high-bay lens** - 2:1 spacing to mounting height under 20 ft. and 1.5:1 spacing to mounting height @ 40 ft. **360° low-bay lens** - 2:1 spacing to mounting height @ 8 ft. to 20 ft. **aisle lens** - 40 ft. long by 20 ft. wide @ 40 ft.
Fixture Mount High-Bay **PIR** Sensor with Three Interchangeable Lenses and Alternating Relay	OSFHD-IAW (120-230-277-347V) OSFHD-CAW (cold storage)	Fluorescent: 800VA @ 120V, 1000VA @ 230VAC, 1200VA @ 277VAC, 1500VA @ 347VAC, 2000VA @ 480VAC, 50/60Hz. Motor: 1/4 HP @ 120V	**360° high-bay lens** - 2:1 spacing to mounting height under 20 ft. and 1.5:1 spacing to mounting height @ 40 ft. **360° low-bay lens** - 2:1 spacing to mounting height @ 8 ft. to 20 ft. **aisle lens** - 40 ft. long by 20 ft. wide @ 40 ft.
Fixture Mount Integral Luminaire **PIR** Occupancy Sensor	OSF10-I0W (120-230-277V) OSF10-IUW 240VDC OSF10-PPW (power pack) (120-230-277V)	Incandescent: 598W @ 120V. Fluorescent: 800VA @ 120 VAC, 1000VA @ 230VAC, 1200VA @ 277VAC 50/60Hz.	360°, 1:1 spacing to mounting height up to 8'
Surface Mount **PIR** High Bay Occupancy Sensor	OSFHS-ITW	800VA @ 120VAC Ballast1200VA @ 277VAC Ballast1500VA @ 347VAC Ballast; Motor: 120V @ 1/4 HP	55ft., 7 ft side @ 30 ft high
Lenses for High-Bay Sensors	OSFLN-00W (High-Bay Lens) OSFLN-00B (Low-Bay Lens) OSFLN-00E (Aisle Lens)	—	—
Offset Adapter Accessory for Fixture-Mount High-Bay Occupancy Sensor	OSFOA-00W OSFLO-00W	—	—
Protective Cage for High-Bay Sensors	OSFCG-00W	—	—

MULTI-TECHNOLOGY CEILING-MOUNT OCCUPANCY SENSORS

These advanced motion sensors combine infrared and ultrasonic technology for highly accurate monitoring without false triggers. All-digital self-adjusting technology provides "install and forget" solution for automatic lighting control. Available in a variety of coverage patterns to suit many applications. Use with Leviton Power Pack.

SPECIFICATIONS & FEATURES

Functional
- Ultrasonic sensing for maximum sensitivity combined with passive infrared (PIR) sensing to prevent false triggers from air conditioning and corridor activity
- Self-adjusting settings continuously analyze and adjust sensitivity, timer operation, and air current compensation for reliable, long-term performance
- Isolated relay supports HVAC or other Class 2 low voltage signals
- Supports both 24VAC/VDC power supplies
- Ambient light override to prevent lights from turning on when there is ample natural light
- Manual delayed-off-time settings of 30 seconds to 30 minutes
- Self-adjusting delayed-off-time interval settings for 30 seconds to 30 minutes
- Compensates for real-time occupancy patterns—preventing unnecessary on/off switching
- Non-volatile memory preserves all automatic and manual settings during power outages

Physical
- Small, unobtrusive unit blends in with any décor
- Fast, simple installation using 4 color-coded low-voltage wires and a single mounting post
- Compatible with Wiremold® surface raceways for mounting to hard ceilings

Ideal Uses
- Classrooms, office areas with cubicles, cafeterias, and public areas in commercial facilities

TESTING & CODE COMPLIANCE
- CUL/US, FCC and NOM Certified
- CEC Title 24 compliant and meets ASHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty

1.55 (39.4)
4.20 (106.7)
OSC05-MoW

1.55 (39.4)
4.20 (106.7)
OSC20-MoW

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	OPERATING FREQUENCY	COVERAGE	COLOR
Ceiling Mount **Multi-Technology** Occupancy Sensor	OSC05-MoW	40kHz	180°, 500SF	Off-White
Ceiling Mount **Multi-Technology** Occupancy Sensor	OSC10-MoW	40kHz	360°,1000SF	Off-White
Ceiling Mount **Multi-Technology** Occupancy Sensor	OSC20-MoW	32kHz	360°, 2000SF	Off-White
Ceiling Mount **Multi-Technology** Occupancy Sensor with Isolated Relay	OSC05-RMW	40kHz	180°, 500SF	White
Ceiling Mount **Multi-Technology** Occupancy Sensor with Isolated Relay	OSC10-RMW	40kHz	360°, 1000SF	White
Ceiling Mount **Multi-Technology** Occupancy Sensor with Isolated Relay	OSC20-RMW	32kHz	360°, 2000SF	White
Power Base Adaptor	OPB15-0DW	-	-	Off-White
Cosmetic Adaptor	OPBCA-00W	-	-	Off-White
Protective Cage for Ceiling-Mount Sensors	ODCCG-000	—	—	Off-White

NOTE: Use low-voltage wiring to connect sensors to OSPXX Power Pack.
See Page 50 for information on OSP Power Packs and Page 56 for wiring diagrams.

OSC05-MoW Field of View (in feet)

OSC10-MoW Field of View (in feet)

OSC20-MoW Field of View (in feet)
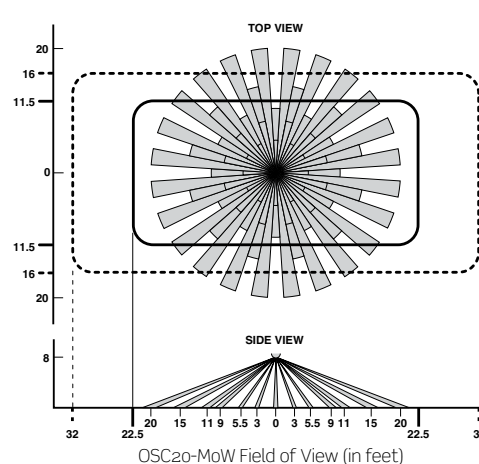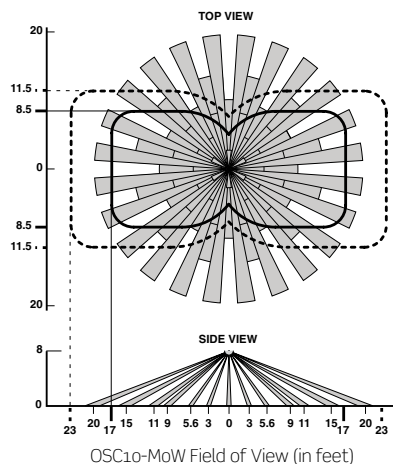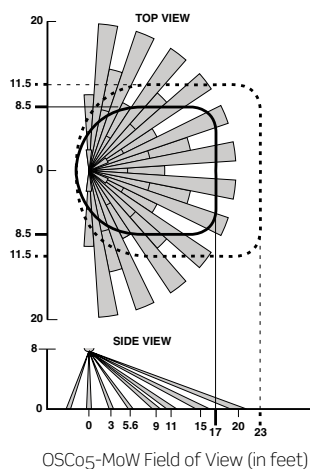
Major Motion, IR   Minor Motion, Ultrasonic   Major Motion, Ultrasonic

ULTRASONIC CEILING-MOUNT OCCUPANCY SENSORS

Advanced ultrasonic sensing technology for highly accurate monitoring, including small-motion detection. All-digital self-adjusting technology provides an "install and forget" solution for automatic lighting control. Use with Leviton Power Pack.

SPECIFICATIONS & FEATURES

Functional
- Ultrasonic sensing for maximum range and sensitivity combined with accurate small-motion detection
- Self-adjusting settings continuously analyze and adjust sensitivity, timer operation, and air current compensation for reliable, long-term performance
- Ambient light override to prevent lights from turning on when there is ample natural light
- Manual delayed-off-time settings of 30 seconds to 30 minutes
- Self-adjusting delayed-off time interval settings for 30 seconds to 30 minutes. Compensates for real-time occupancy patterns—preventing unnecessary ON/OFF switching
- Non-volatile memory preserves all automatic and manual settings during power outages

Physical
- Small, unobtrusive unit blends in with any décor
- Fast, simple installation using 4 color-coded low-voltage wires and a single mounting post
- Compatible with Wiremold® surface raceways for mounting to hard ceilings

Ideal Uses
- Restrooms, office areas with cubicles, warehouse and storage facilities, cafeterias, and public areas in commercial facilities

TESTING & CODE COMPLIANCE

- CUL/US Certified
- Meets AHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty

1.34 (34.0)
4.20 (106.7)

OSC05-U0W

1.34 (34.0)
4.20 (106.7)

OSC20-U0W

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	OPERATING FREQUENCY	COVERAGE	COLOR
Ultrasonic Ceiling Mount Occupancy Sensor	OSC05-U0W	40kHz	180°, 500SF	Off-White
Ultrasonic Ceiling Mount Occupancy Sensor	OSC10-U0W	40kHz	360°, 1000SF	Off-White
Ultrasonic Ceiling Mount Occupancy Sensor	OSC20-U0W	32kHz	360°, 2000SF	Off-White
Power Base Adaptor	OPB15-0DW	-	-	Off-White
Ultrasonic Ceiling Mount Occupancy Sensor with Isolated Relay	OSC05-RUW	40kHz	180°, 500SF	White
Ultrasonic Ceiling Mount Occupancy Sensor with Isolated Relay	OSC10-RUW	40kHz	360°, 1000SF	White
Ultrasonic Ceiling Mount Occupancy Sensor with Isolated Relay	OSC20-RUW	32kHz	360°, 2000SF	White
Cosmetic Adaptor	OPBCA-00W	-	-	Off-White
Protective Cage for Ceiling-Mount Sensors	ODCCG-000	-	-	Off-White

NOTE: Use low-voltage wiring to connect sensors to OSPXX Power Pack.

OSC05-U0W Field of View (in feet)

OSC10-U0W Field of View (in feet)

OSC20-U0W Field of View (in feet)

◻ **Minor Motion, Ultrasonic**   ⌐⌐ **Major Motion, Ultrasonic**

INFRARED CEILING-MOUNT OCCUPANCY SENSORS

SPECIFICATIONS & FEATURES

Functional
- Self-adjusting settings continuously analyze and adjust sensitivity, timer operation, and long-term performance
- Isolated relay supports HVAC or other Class 2 low voltage signals
- Supports both 24VAC/VDC power supplies
- Ambient light override prevents lights from turning on when there is ample natural light
- Manual delayed-off-time settings of 30 seconds to 30 minutes
- Self-adjusting delayed-off-time interval settings for of 30 seconds to 30 minutes. Compensates for real-time occupancy patterns—preventing unnecessary on/off switching
- Non-volatile memory preserves all automatic and manual settings during power outages

Physical
- Small, unobtrusive unit blends in with any décor
- Fast, simple installation using 4 color-coded low-voltage wires and a single mounting post
- Compatible with Wiremold® surface raceways for mounting to hard ceilings

Ideal Uses
- Small offices, closets, open offices, and other areas in commercial facilities with unobstructed view of the sensor

TESTING & CODE
- CUL/US Certified
- Meets ASHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty

1,55 (39.4)

4.20 (106.7)

OSC04-loW

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	COVERAGE	COLOR
Ceiling Mount **PIR** Occupancy Sensor	OSC04-loW	360°, 450SF	Off-White
Ceiling Mount **PIR** Occupancy Sensor	OSC15-loW	360°, 1500SF	Off-White
Ceiling Mount **PIR** Occupancy Sensor with Isolated Relay	OSC04-RIW	360°, 450SF	White
Ceiling Mount **PIR** Occupancy Sensor with Isolated Relay	OSC15-RIW	360°, 1500SF	White
Power Base Adaptor	OPB15-0DW	-	-
Cosmetic Adaptor	OPBCA-00W	-	-
Protective Cage for Ceiling-Mount Sensors	ODCCG-000	-	Off-White

NOTE: Use low-voltage wiring to connect sensors to OSPXX Power Pack.

TOP VIEW

TOP VIEW

☐ Minor Motion, IR
☐ Major Motion, IR

SIDE VIEW

SIDE VIEW

OSC04-loW Field of View (in feet)

OSC15-loW Field of View (in feet)
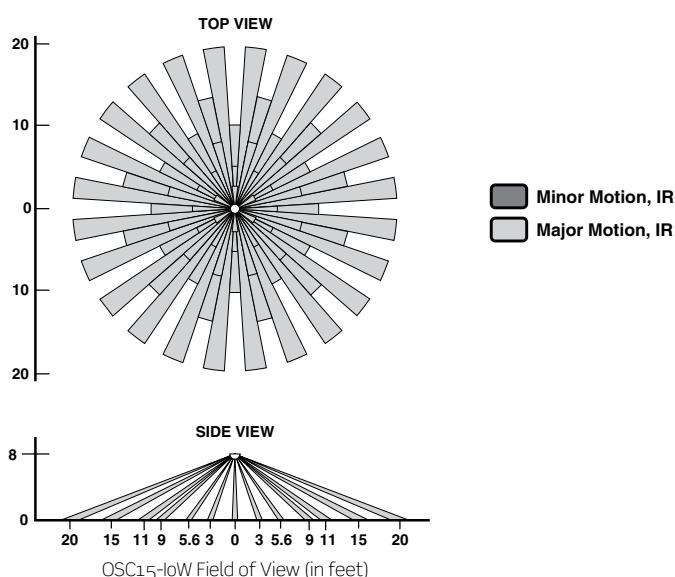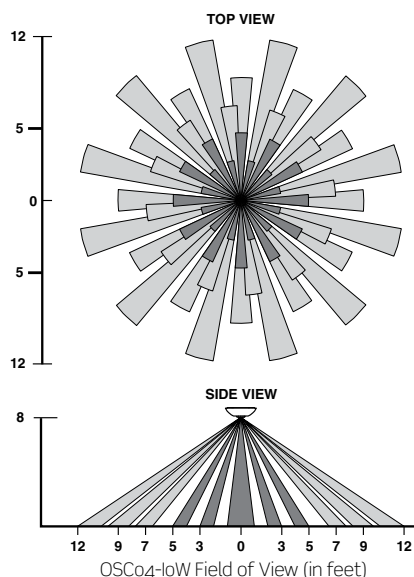
MULTI-TECHNOLOGY WALL-MOUNT OCCUPANCY SENSORS

SPECIFICATIONS & FEATURES
- Ultrasonic sensing for maximum sensitivity combined with passive infrared (PIR) sensing to prevent false triggers from air conditioning and corridor activity
- Isolated relay supports HVAC or other Class 2 low voltage signals
- Supports both 24VAC/VDC power supplies
- Adjustable swivel neck rotates 80° vertically and 60° horizontally. Can be used for ceiling or wall mounting
- Self-adjusting settings continuously analyze and adjust sensitivity, timer operation, and air current compensation for reliable, long-term performance
- Ambient light override to prevent lights from turning on when there is ample natural light
- Manual delayed-off-time settings of 30 seconds to 30 minutes
- Self-adjusting delayed-off-time interval settings of 30 seconds to 30 minutes. Compensates for real-time occupancy patterns, preventing unnecessary on/off switching
- Non-volatile memory preserves all automatic and manual settings during power outages
- Fast, simple installation using 3 color-coded low-voltage wires and a single mounting post

Ideal Uses
- Conference rooms, stairwells, high-ceiling rooms, open areas, storage rooms, and classrooms—including corner mounting in a variety of applications

OSW12-MoW

OSW12-RMW

TESTING & CODE COMPLIANCE
- CUL/US Certified
- Meets ASHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	OPERATING FREQUENCY	COVERAGE	COLOR
Wall Mount **Multi-Technology** Occupancy Sensor	OSW12-MoW	32kHz	115°, 1200SF	Off-White
Wall Mount **Multi-Technology** Occupancy Sensor with Isolated Relay	OSW12-RMW	32kHz	115°, 1200SF	White
Power Base Adaptor	OPB15-0DW	-	-	-
Cosmetic Adaptor	OPBCA-00W	-	-	-
Protective Cage for Wall-Mount Sensors	OSWCG-P0W	-	-	Off-White

NOTE: Use low-voltage wiring to connect sensors to OSPXX Power Pack
See Page 50 for information on OSP Power Packs and Page 57 for wiring diagrams.
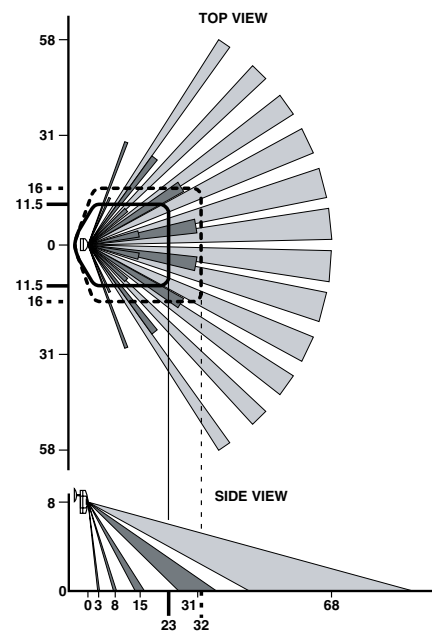
OSW12-MoW Field of View (in feet)

- Minor Motion, IR
- Major Motion, IR
- Minor Motion, Ultrasonic
- Major Motion, Ultrasonic

INFRARED INDOOR WALL-MOUNT OCCUPANCY SENSORS

Advanced PIR technology for highly accurate monitoring. All-digital self-adjusting technology provides an "install and forget" solution for automatic lighting control. Use with Leviton Power Pack.

SPECIFICATIONS & FEATURES

- Self-adjusting settings continuously analyze and adjust for optimum performance
- Isolated relay supports HVAC or other Class 2 low voltage signals
- Supports both 24VAC/VDC power supplies
- Adjustable swivel neck rotates 80° vertically and 60° horizontally. Can be used for ceiling or wall mounting
- Ambient light override prevents lights from turning on when there is ample natural light
- Manual delayed-off-time settings of 30 seconds to 30 minutes
- Self-Adjusting delayed-off-time interval settings for 30 seconds to 30 minutes. Compensates for real-time occupancy patterns—preventing unnecessary ON/OFF switching
- Non-volatile memory preserves all automatic and manual settings during power outages
- Fast, simple installation using 3 color-coded low-voltage wires and a single mounting post

Ideal Uses

- OSWWV-I: conference rooms, stairwells, high-ceiling rooms, large open areas, parking garages, storage rooms, and rooms with pendant fixtures. Also ideal for corner mounting
- OSWHB-I & OSWLR-I: monitoring long, narrow spaces such as warehouse aisles, hallways, closets, and storage areas. Also ideal for corner mounting

OSWxx-IoW

OSWHB-IoW

TESTING & CODE COMPLIANCE

- CUL/US Certified • Meets ASHRAE Standard 90.1 requirements • Backed by a Limited Five-Year Warranty

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	COVERAGE	COLOR
Wide-View Wall Mount **PIR** Occupancy Sensor	OSWWV-IoW	115°, 2500SF	Off-White
High-Bay Wall Mount **PIR** Occupancy Sensor	OSWHB-IoW	55 ft., 7 ft. wide @ 30 ft. high	Off-White
Long-Range Wall Mount **PIR** Occupancy Sensor	OSWLR-IoW	100ft., 110° @ 10ft. high	Off-White
Wide-View Wall Mount **PIR** Occupancy Sensor with Isolated Relay	OSWWV-RIW	115°, 2500SF	White
High Bay Wall Mount **PIR** Occupancy Sensor with Isolated Relay	OSWHB-RIW	55ft., 7ft wide @ 30ft. high	White
Long-Range Wall Mount **PIR** Occupancy Sensor with Isolated Relay	OSWLR-RIW	100ft., 110° @ 10ft. high	White
Power Base Adaptor	OPB15-0DW	-	Off-White
Cosmetic Adaptor	OPBCA-00W	-	Off-White
Protective Cage for Wall-Mount Sensors	OSWCG-P0W	-	Off-White

NOTE: Use low-voltage wiring to connect sensors to OSPXX Power Pack.
See Page 50 for information on OSP Power Packs and Page 57 for wiring diagrams.

TOP VIEW

SIDE VIEW

OSWWV Field of View (in feet)

TOP VIEW

SIDE VIEW

Minor Motion, IR
Major Motion, IR

OSWLR Field of View (in feet)

TOP VIEW

SIDE VIEW

OSWHB Field of View (in feet)
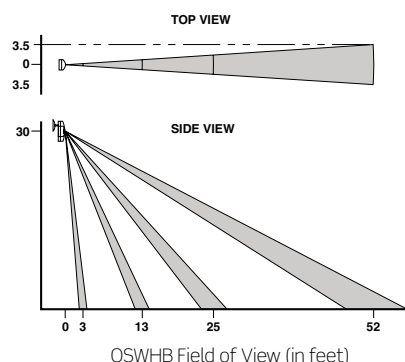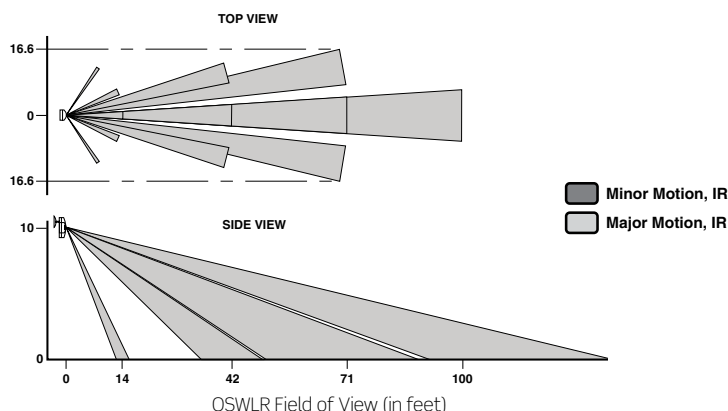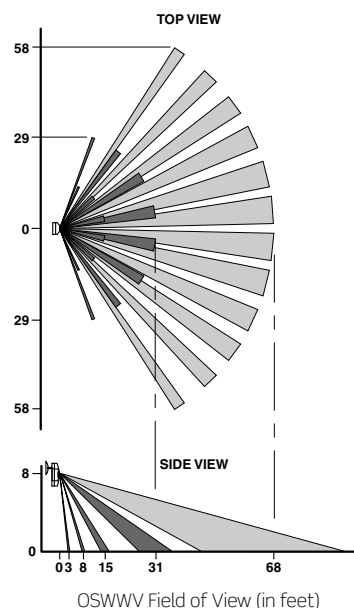
OCCUPANCY SENSOR POWER PACKS

Power packs provide power for occupancy sensors as well as load switching circuitry. A Leviton Power Pack is required with any low voltage occupancy sensor. Add-A-Relay units can be used to expand control capability.

SPECIFICATIONS & FEATURES

Power Pack

- For use with all OS Series occupancy sensors
- Power supply for OS Series occupancy sensors
- Auto-ON and manual-ON inputs for occupancy sensors (OSP20-RDH)
- Hold-ON and Hold-OFF capabilities (OSP20-RDH)
- Switches incandescent, magnetic and electronic fluorescent, magnetic and electronic low voltage, and motor loads
- Compact size and light weight allows easy mounting through knockout in junction box (from either inside or outside the box) with a simple twist-on nut

Add-A-Relay

- Expands power pack load capacity by functioning as a supplementary relay
- Provides ability to switch loads in different voltage systems
- Compatible with electronic ballasts
- Same compact size and mounting features as Power Pack
- Zero-crossing switching circuitry for outstanding durability

Nipple Adapter

- Simplifies the connection of occupancy sensor to the low-voltage side of a power pack mounted inside a fluorescent ballast cavity
- 1/2" conduit lock nut included

3.66 (93.0)
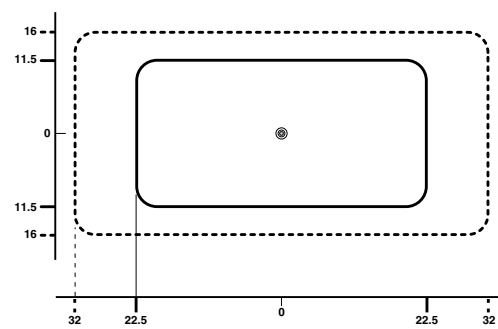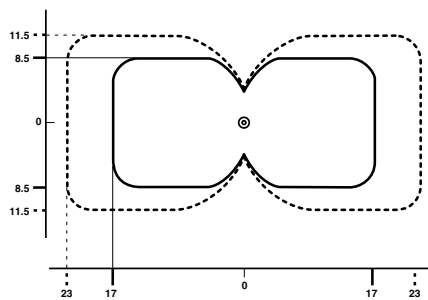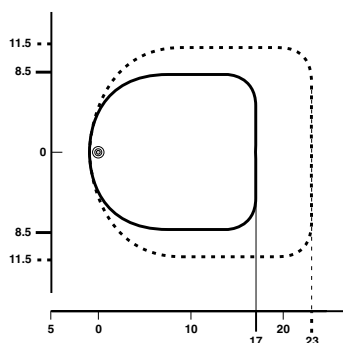
2.35 (59.7)

1.38 (35.1)

OSP20-RD0

TESTING & CODE COMPLIANCE

- CUL/US, FCC and NOM Certified   • Meets ASHRAE Standard 90.1 requirements   • Backed by a Limited 5-Year Warranty

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	POWER INPUT*	RELAY RATING	CONTROL INPUT	POWER SUPPLY OUTPUT
Power Pack	OSP20-0D0	120-230-277VAC, 50/60Hz	20A fluorescent/incandescent @ 120V, 20A fluor. @ 230-277V; 1HP @ 120V, 2HP @ 240V	5mA, 24VDC	150mA, 24VDC
Power Pack with HVAC relay	OSP20-RD0	120-230-277VAC, 50/60Hz	20A fluorescent/incandescent @ 120V, 20A fluor. @ 277V; 1HP @ 120V, 2HP @ 240V; HVAC: 0.5A @ 120VAC, 1A @ 30VDC	5mA, 24VDC	150mA, 24VDC
Power Pack with HVAC relay	OSP15-R30	347VAC, 60Hz	15A fluorescent @ 347V; 1HP @ 120V, 2HP @ 240V; HVAC: 0.5A @ 120VAC, 1A @ 30VDC	5mA, 24VDC	120mA, 24VDC
Add-A-Relay Unit with HVAC relay	OSA20-R00	——	15A incandescent @ 120V, HVAC: 0.5A @ 125VAC, 1A @ 30VDC	5mA, 24VDC	——
Power Pack with HVAC Relay with Auto-ON and Manual-ON Inputs for Occupancy Sensors	OSP20-RDH	120-230-277VAC, 50/60Hz	20A incandescent @ 120V, 20A fluor. @ 120-230-277/347VAC; 1/2HP @ 120V, 2HP @ 240-277V; HVAC: 0.5A @ 120VAC, 1A @ 30VDC	5mA, 24VDC	225mA, 24VDC

* Consult with factory for 208, 220, and 240V models.
NOTE: See page 71 for Ordering Information on Low Voltage Switches for use with Power Packs

POWER PACK CAPACITY FORMULA

Leviton power packs can be used to provide power to one or more occupancy sensors. Since current consumptions of occupancy sensors may vary, the best way to ensure you order the correct number of power packs and add-a-relays is by using this formula:

$$\left(\frac{\text{\# of sensor Model As}}{\text{Sensor A current consumption rating}}\right) + \left(\frac{\text{\# of sensor Model Bs}}{\text{Sensor B current consumption rating}}\right) + \left(\frac{\text{\# of Add a Relays}}{50\text{mA}}\right) \leq \textbf{Power Supply Output}$$

SENSOR	CURRENT CONSUMPTION
OSC04-I, OSC15-I, OSWHB-I, OSWLR-I, OSWWV-I	10-15mA
OSC05-M, OSC05-U, OSW12-M	25mA
OSC10-M, OSC10-U	30mA
OSC20-M, OSC20-U	40mA
OSA20-R00 Add a Relay	50mA

SELF-CONTAINED POWER BASE ADAPTOR

- Patent-pending design converts Leviton low voltage ceiling sensors to line voltage
- Ideal for both existing buildings with limited access to low-voltage wiring and new constructions with line-voltage circuiting only.
- Mounts easily in standard 2.125" deep x 4" octagon or 2.125" deep x 4" square electrical box with a 2-gang mud ring; flying leads provide fast line voltage connections
- Two-piece terminal block provides fast, easy low-voltage connections to the sensor
- Relay uses zero-crossing circuitry for enhanced reliability and long-life operation

Ideal Uses

- Lavatories, remodels in hard ceiling spaces, energy conservation retrofits and any installation with limited access for low-voltage wiring.

Ø4.50 (114.3)

1.75 (44.5)

OPB15-0DW

TESTING & CODE COMPLIANCE

- NOM Certified

POWER BASE ADAPTOR*

DESCRIPTION	CAT. NO.	POWER INPUT/OUTPUT	RATING	COLOR
Converts select Leviton low-voltage ceiling or wall mount occupancy sensor models to a self-contained line voltage unit	OPB15-0DW	Power Input: 120-230-277VAC, 50/60Hz Control Input: 24VDC, 5mA Power Output: 120VAC @ 15A incandescent; 277VAC @ 15A fluorescent; Motor: 120VAC 3/4HP, 277VAC 2HP Control Output: 24VDC, 40mA	15A	Off-White
Cosmetic Adaptor	OPBCA-00W	—	—	Off-White

Agency Listings & Code Compliance: NOM Certified.
* Available in Off-White only. Consult with factory for 208, 220, 230 and 240V models.
Note: See Page 57 for wiring diagrams.
NOTE: Coverts OSCxx-I, OSCxx-M and OSCxx-U. Does not convert OSCxx-R.

OPB15-0DW (Occupancy sensor not included)

NEUTRAL (WHITE)

LOAD

HOT (BLACK) 120-277V

LOAD (BLUE)

OPB15 Power Base

Any Leviton Low-Voltage Ceiling or Wall Mount Sensor
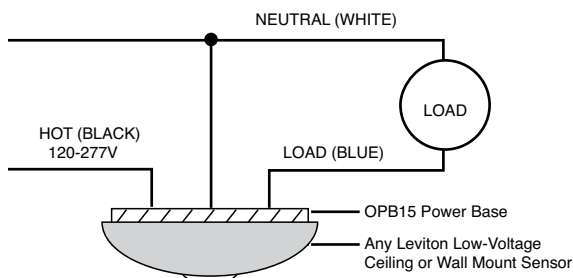
OPB15-0DW Wiring Diagram

OUTDOOR MOTION SENSORS

Passive Infrared (PIR) outdoor motion sensors provide outstanding value in security lighting, as well as convenience, safety and energy savings for a wide range of commercial and residential applications.

SPECIFICATIONS & FEATURES

Professional Series

- Adjustable sensitivity and immunity to RFI signals reduces false triggers
- Ambient light override prevents lights from turning on when there is ample natural light
- Surge suppression minimizes likelihood of damage due to electrical surges
- Temperature compensation feature ensures uniform performance in extreme hot or cold weather and during temperature fluctuations

Residential Series

- Ideal for a wide range of residential settings including backyards, garages, entranceways, porches, swimming pool areas, doorways, and private docks
- Adjustable sensitivity reduces false triggers

Both Series

- Sensor neck adjustment allows accurate monitoring: 110° vertical, 180° horizontal, 110° rotational
- With or without with dual floodlight lampholder
- Adjustable delayed-off-time settings from 20 seconds (for test mode) to 15 minutes
- Provides automatic, test and continuous modes. Test mode simulates automatic operation with short delayed-OFF-time for easy adjustments. Continuous mode enables manual override for constant "lights ON" operation (when used with standard ON/OFF switch)

Ideal Uses

- A wide range of commercial/industrial settings including parking areas, storage facilities, warehouses, loading docks, marina, garages, walkways, campus grounds, and outbuildings
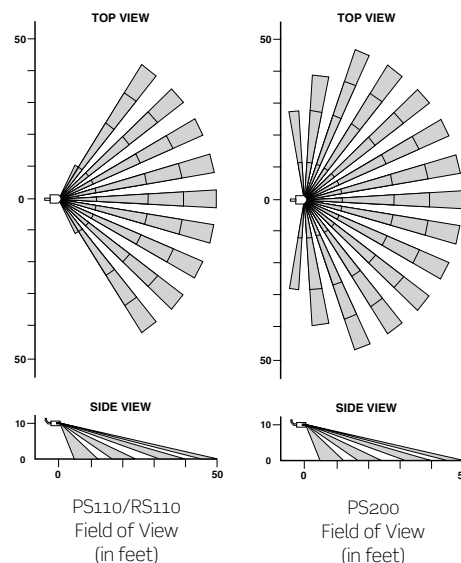
TESTING & CODE COMPLIANCE

- UL and cUL Listed
- Meets ASHRAE Standard 90.1 requirements
- Backed by a Limited Five-Year Warranty

PS200

PS110/RS110
Field of View
(in feet)

PS200
Field of View
(in feet)

COMMERCIAL GRADE

DESCRIPTION	CAT. NO.	RATING	COVERAGE	COLOR
Outdoor **PIR** Motion Sensor	PS200-10	Incandescent: 1000W @ 120V. For 60Hz AC only	200°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	PS200-1F	Same as Above	200°	White
Outdoor **PIR** Motion Sensor	PS110-10	Same as Above	110°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	PS110-1F	Same as Above	110°	White
Outdoor **PIR** Motion Sensor	PS200-70W	277VAC, 60Hz. 7.22 incandescent, 5A ballasts.	200°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	PS200-7FW	277VAC, 60Hz. 7.22 incandescent, 5A ballasts.	200°	White
Outdoor **PIR** Motion Sensor	PS200-40W	220-240VAC, 50/60Hz. 10A incandescent, 5A ballasts.	200°	White
Outdoor **PIR** Motion Sensor withDual Floodlight Lampholder	PS200-4FW	220-240VAC, 50/60Hz. 10A incandescent, 5A ballasts.	200°	White
Outdoor **PIR** Motion Sensor	PS110-70W	277VAC, 60Hz. 7.22 incandescent, 5A ballasts.	110°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	PS110-7FW	277VAC, 60Hz. 7.22 incandescent, 5A ballasts.	110°	White
Outdoor **PIR** Motion Sensor	PS110-40W	220-240VAC, 50/60Hz. 10A incandescent, 5A ballasts.	110°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	PS110-4FW	220-240VAC, 50/60Hz. 10A incandescent, 5A ballasts.	110°	White

RESIDENTIAL GRADE

DESCRIPTION	CAT. NO.	RATING	COVERAGE	COLOR
Outdoor **PIR** Motion Sensor	RS110-10W	Incandescent: 500W @ 120V. For 60Hz AC only	110°	White
Outdoor **PIR** Motion Sensor with Dual Floodlight Lampholder	RS110-1FW	Incandescent: 500W @ 120V. For 60Hz AC only	110°	White

APPLICATIONS

Two Occupancy Sensors Controlling One Load (manual override off)

Note: Ground must be connected
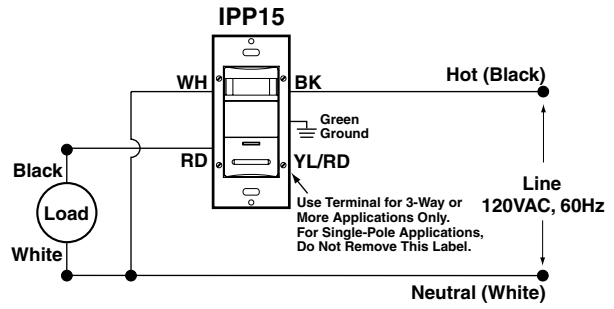
Occupancy Sensor and Dimmer Controlling One Load (manual override off)
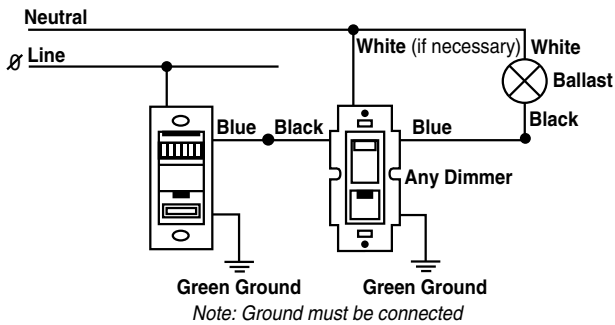
Note: Ground must be connected

PR150 Wall Switch Occupancy Sensor Wiring Diagram

IPP15 Wall Switch Occupancy Sensor Wiring Diagram
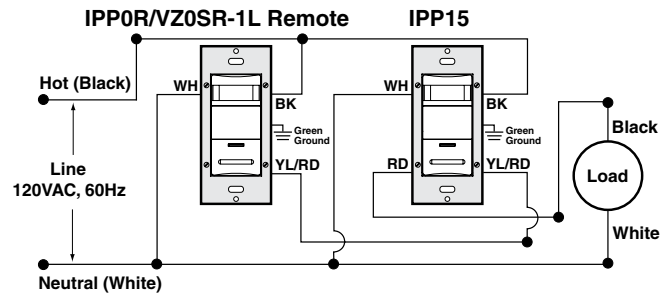
3-way IPP15 with IPP0R or VZ0SR Wiring Diagram
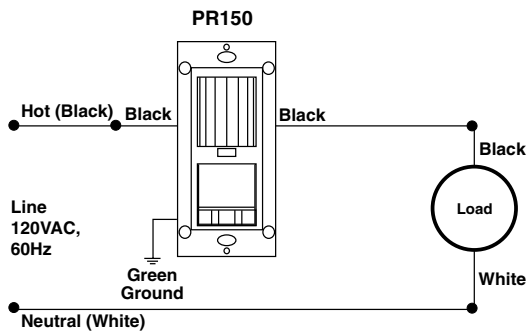
PR180 Wall Switch Occupancy Sensor 3-Way Wiring Diagram
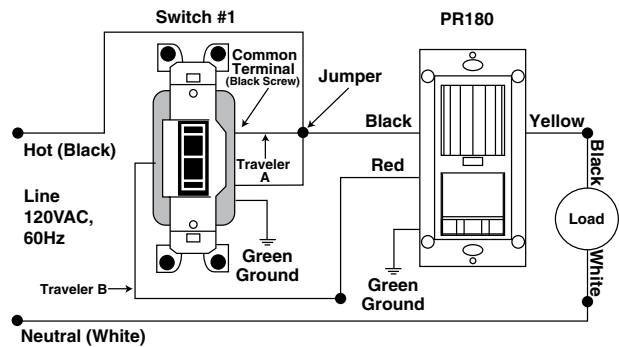
WALL SWITCH OCCUPANCY SENSORS

ODS10/15 Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

ODS10/15

Hot (Black)

Black

Blue

Black

Line 120-230-277VAC, 60Hz

Load

Green Ground

White

Neutral (White)

Note: Ground must be connected
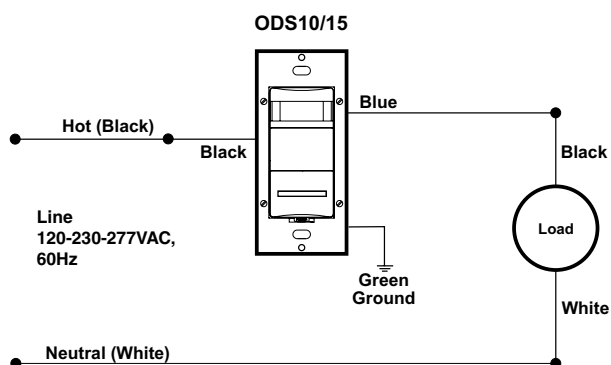
ODS10/15 Wall Switch Occupancy Sensor Wiring Diagram, Two-Location Control†

ODS10/15

Hot (Black)

Black

Blue

Blue

Black

Line 120-230-277VAC, 60Hz

Green Ground

Green Ground

Black

Load

White

Neutral (White)

Note: Ground must be connected
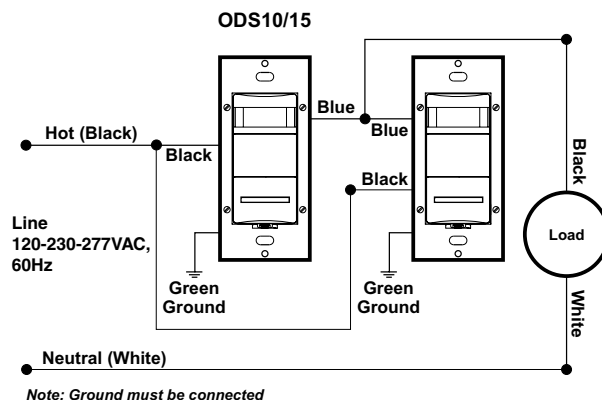
ODS0D Wall Switch Occupancy Sensor Wiring Diagram (For Single Pole, Single Phase Application)†

ODS0D

Hot (Black) Phase 1

Red

Black

Red

Blue

Line 120-230-277VAC, 60Hz

Green Ground

Primary Load

Secondary Load

Neutral (White)

Note: Ground must be connected
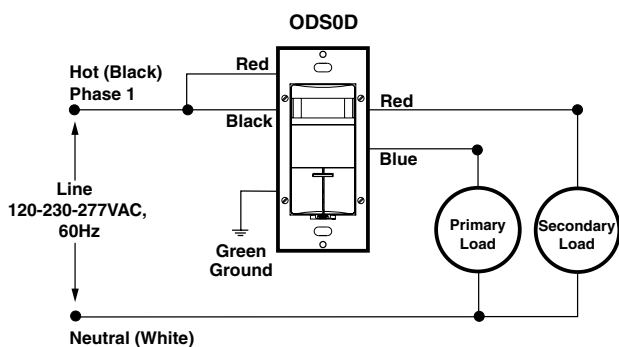
ODS0D Wall Switch Occupancy Sensor Wiring Diagram (For Single Pole, Two Phase Applications†)

ODS0D

Red (To Phase 2)

Hot (Black) Phase 1

Black

Red

Blue

Line 2

Line 1 120-230-277VAC, 60Hz

Green Ground

Primary Load

Secondary Load

Neutral 1 (White)

Neutral 2

Note: Ground must be connected
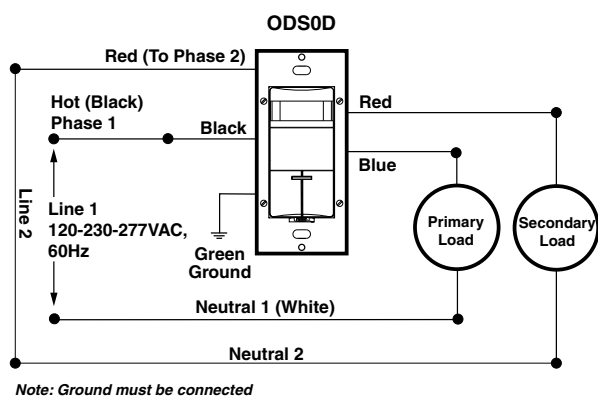
OSSNL/10 Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

OSSNL/OSS10

Black (Hot)

Black

Blue

White

Black

Line 120-230-277VAC, 60Hz

Load

Green Ground

White

Neutral (White)
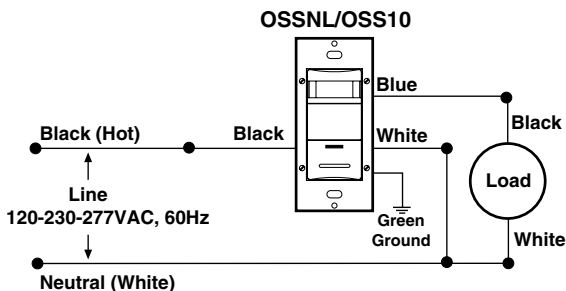
† Consult with factory for 208, 220, 230, and 240V models.

OSSMD-MD Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†
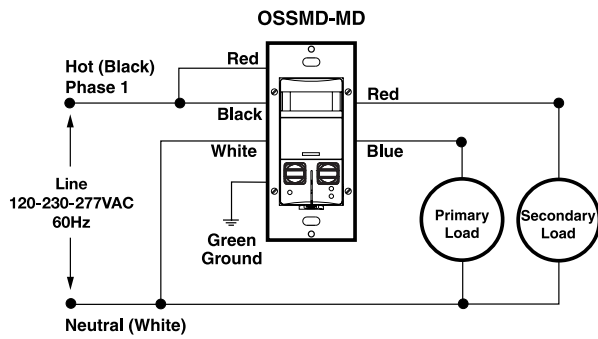
OSSMD-MD

Red
Hot (Black)
Phase 1
Black
Red
White
Blue
Line
120-230-277VAC
60Hz
Green
Ground
Primary Load
Secondary Load
Neutral (White)

OSSMD-GD Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

OSSMD-GD

Red
Hot (Black)
Phase 1
Black
Red
Blue
Line
120-230-277VAC
60Hz
Green
Ground
Primary Load
Secondary Load
Neutral (White)
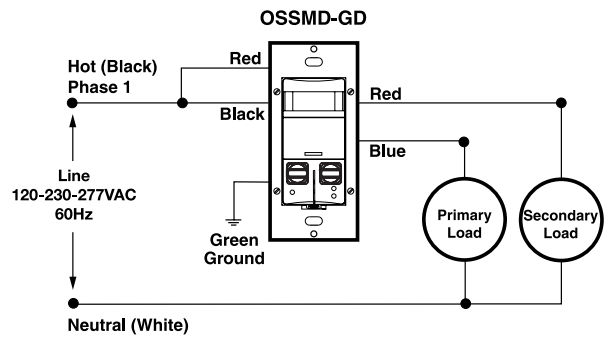
OSSMD-FT Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

OSSMD-FT

Red
Hot (Black)
Phase 1
Black
Red
White
Blue
Line
120-230-277VAC
60Hz
Green
Ground
Primary Load
Fan/Secondary Load
Neutral (White)

OSSMT-MD Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

OSSMT-MD

Blue
Black (Hot)
Black
White
Black
Load
Line
120VAC, 60Hz
Green
Ground
White
Neutral (White)
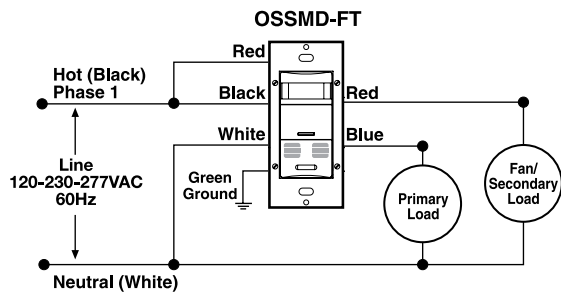
OSSMT-GD Wall Switch Occupancy Sensor Wiring Diagram, Single Location Control†

OSSMT-GD

Blue
Black (Hot)
Black
Black
Load
Line
120VAC, 60Hz
Green
Ground
White
Neutral (White)
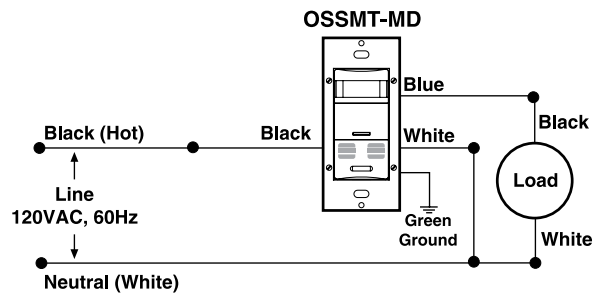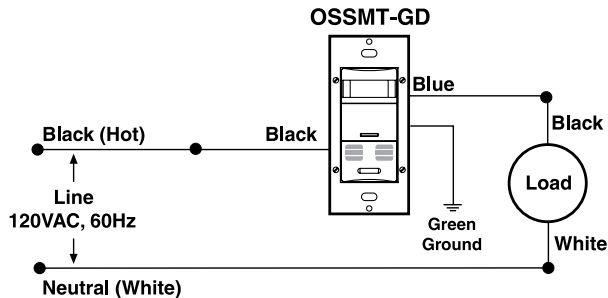
† Consult with factory for 208, 220, 230, and 240V models.

FIXTURE-MOUNT HIGH BAY AND CEILING MOUNT OCCUPANCY SENSORS

OSFHU-ITW Occupancy Sensor Wiring Diagram†
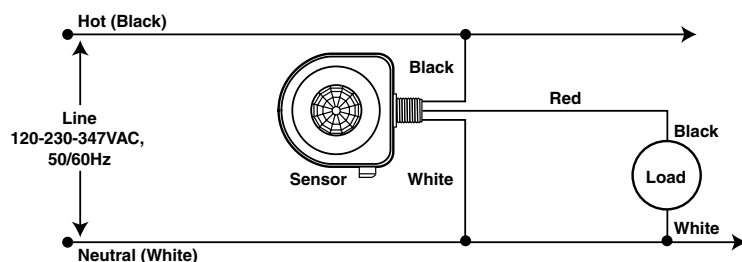
OSF10 Occupacy Sensor Wiring Diagram†
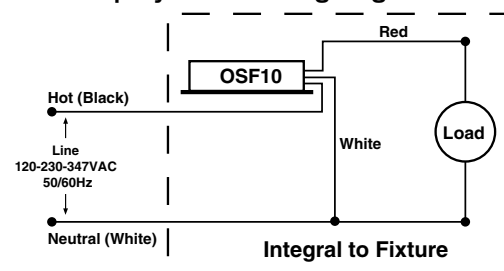
OSFHU-I4W Occupancy Sensor Wiring Diagram†
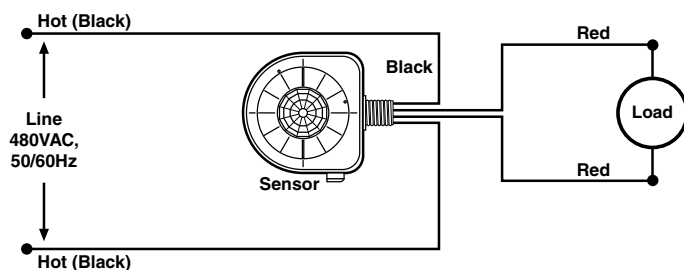
ODCoS-I1 Ceiling Mount Occupancy Sensor Wiring Diagram
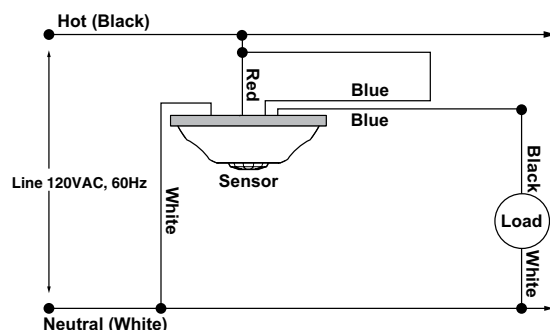
ODCoS-I2 Ceiling Mount Occupancy Sensor, Single-Location Wiring Diagram
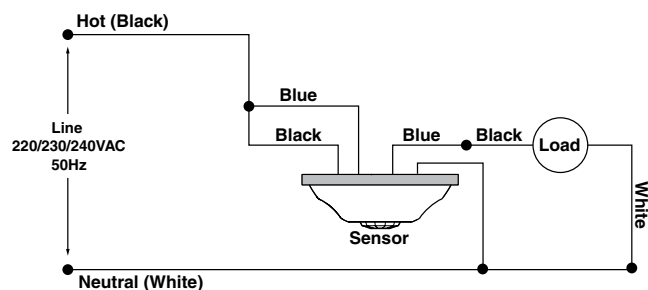
ODCoS-I2 Ceiling Mount Occupancy Sensor, Two-Location Wiring Diagram
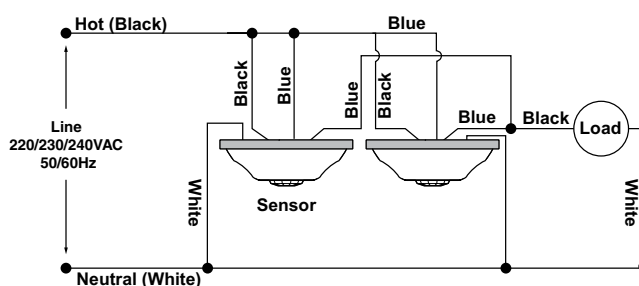
ODCoS-I7 Ceiling Mount Occupancy Sensor Wiring Diagram
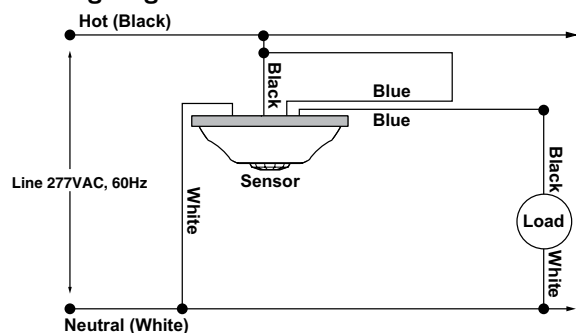
OS-Series Ceiling Mount Occupancy Sensor (with Power Pack) Wiring Diagram
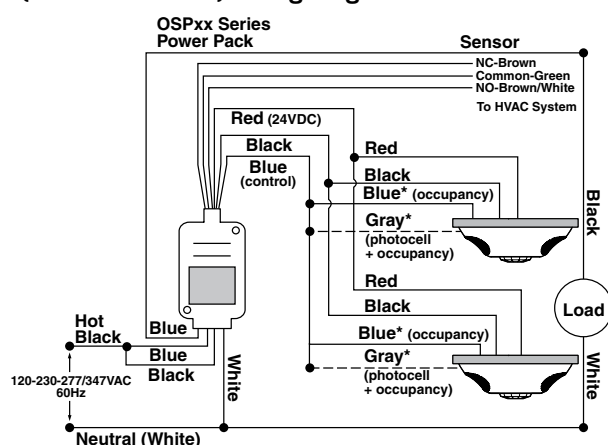
† Consult with factory for 208, 220, 230, and 240V models.

WALL-MOUNT OCCUPANCY SENSORS

OSWxx Occupancy Sensor Wiring Diagram with Single Power Pack†
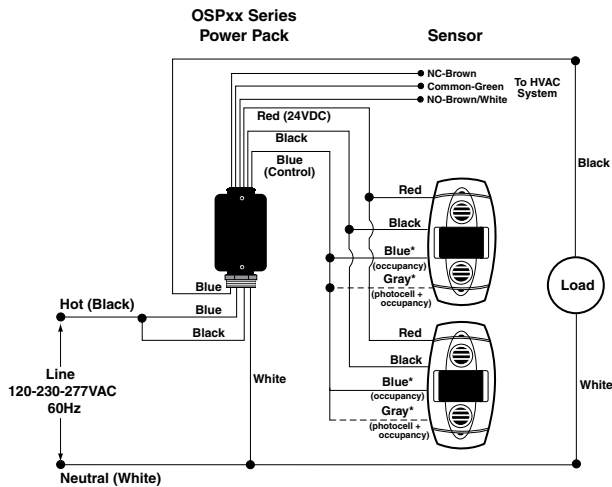
OSWxx Occupancy Sensor Wiring Diagram with Multiple Power Packs†
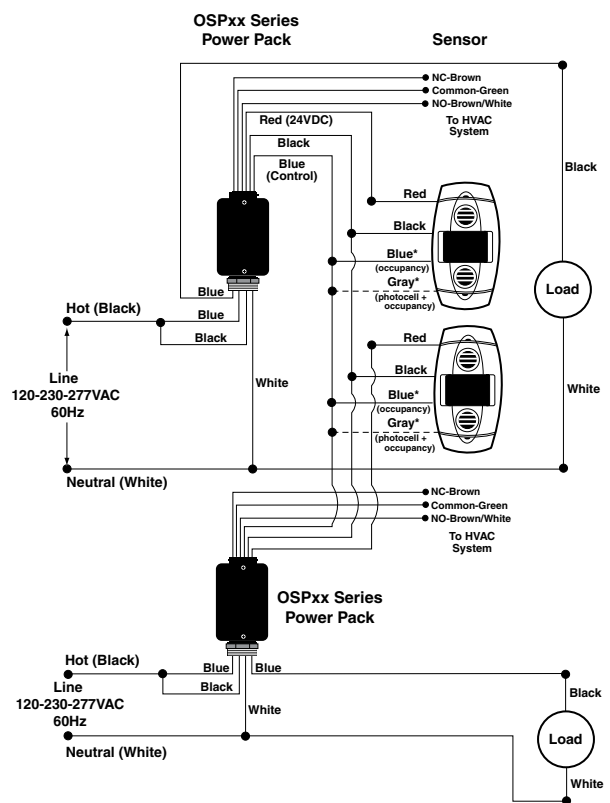
OSWxx Occupancy Sensor Wiring Diagram with Power Pack and Add-A-Relay†
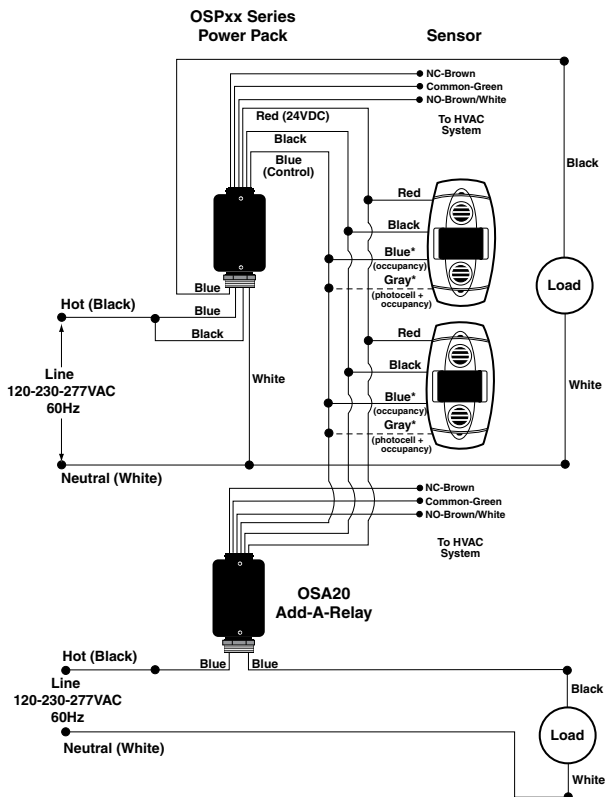
OPB15-0DW Power Base Adaptor
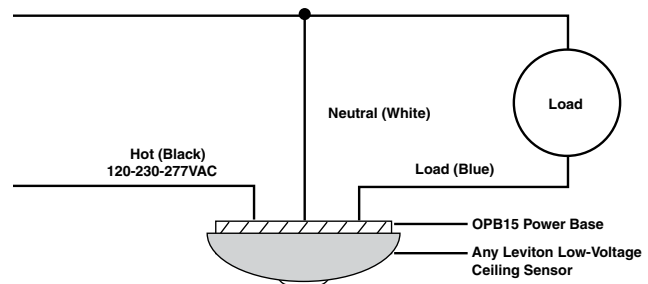
† Consult with factory for 208, 220, 230, and 240V models.

*When the photocell function is not being used, connect the Blue Occupancy Sensor lead to the Blue Power Pack lead. When using the Photocell function, connect the Gray Occupancy Sensor lead to the Blue Power pack lead–Do not use the Blue Occupancy Sensor lead for the photocell function.

LevNet RF is Leviton's family of energy harvesting radio frequency products based on EnOcean's technology.

EnOcean-based products, including the LevNet RF products, have three common features. They are:

• Energy harvesting technology

• Wireless (radio frequency)

• Interoperable within an RF-based network.

Energy harvesting technology allows LevNet RF Transmitters (i.e., occupancy sensors, switches, light sensors and hotel key card switches) to operate indefinitely without external power or batteries. Self-powered Transmitters receive power from the motion of a switch actuation, light on a solar cell or temperature differentials in the environment for a true zero-maintenance wireless device. Operating in the 315 mHz band provides minimal competing traffic and greater transmission range than other wireless technologies. With no additional or new wiring required, LevNet RF delivers easy to install wireless lighting controls with little to no interruption to a customer's operations and without damage to the customer's property.

PRODUCT OVERVIEW

There are three main types of LevNet RF Products: Transmitters, Receivers, and Transceivers (Transmitter – Receiver in one). A fourth type of category might best be referred to as accessories.

A Transmitter, such as a switch, generates a wireless RF control signal (e.g., "ACTUATE RELAY"). All Transmitters are self-powered completely wireless products which can be located anywhere and send transmission signals. Transmitters are available in Occupancy Sensor, Light Sensor, Switch Leg, Vizia Style Remote Switch, Decora Rocker Switch Remote, Handheld Remote, Hotel Key Card and 3x3 Remote Switch (International) varieties.

A Receiver receives a control signal from a Transmitter and performs the appropriate action (e.g., activate or deactivate the relay). All Receivers are connected to a power source and a load which the Receiver then operates when the RF signal is received. Receivers are available in Basic and Advanced Wall Switch, 3- and 5 Wire Relay, Plug-In and Thermostat styles.

A Transceiver acts as both a Transmitter (when it is generating an RF signal) and as a Receiver (when it receives and processes an RF signal generated by a Transmitter). The Transceiver can also be used as a repeater where it utilizes the Receiver and then re-transmits the RF signal. Leviton offers room, shade, dimmer and 4- and 8- Channel Relay Controllers.

Accessories available for LevNet RF products include RS-232 Serial Box, Signal Strength Meter, Power Packs and Industrial Wireless Relay.

FEATURES

• Easy to install for new construction and retrofitting applications, requiring minimal labor or disruption to operations

• Requires no new wiring and installs in ¼ the time of hardwired sensors, translating into faster turnaround and reduced costs

• With no batteries to replace and no maintenance to perform, plus annual energy savings and rebates that can total up to 80% in reduced costs, LevNet RF revolutionizes efficiency and savings

• Lowest power consumption of any RF device with less than one Watt per device used annually, saving approximately 70% over other RF devices

• LevNet RF is the only energy harvesting wireless solution that fulfill LEED requirements to earn LEED points for both wireless control and no battery.

WIRED VS. WIRELESS COSTS
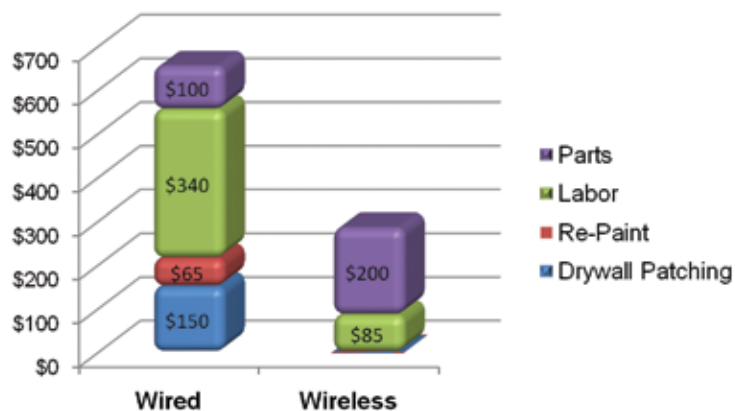
* Installation time per device: 45-50 minutes for hardwire vs. 10-15 minutes for wireless devices

HOW TO PUT IT ALL TOGETHER

TIP: A good way to visualize your wireless system is to imagine that the "wires" connecting each device are invisible wires or "unique addresses."

LOADS

LEVNET RF RECEIVERS

LEVNET RF TRANSMITTERS

HVAC Unit

Thermostat

Wireless Occupancy Sensor

Fan

24V 5-Wire Relay Receiver

Wireless Switches

Lighting

5-Wire Relay Receiver

Wireless 3 x 3 Switches

Plug-In ON/OFF Relay Receiver

4-Button Handheld Remote

Television

Plug-In ON/OFF Relay Receiver

Wireless Control Signal Up To 150 ft.

Hotel Key Card Switch
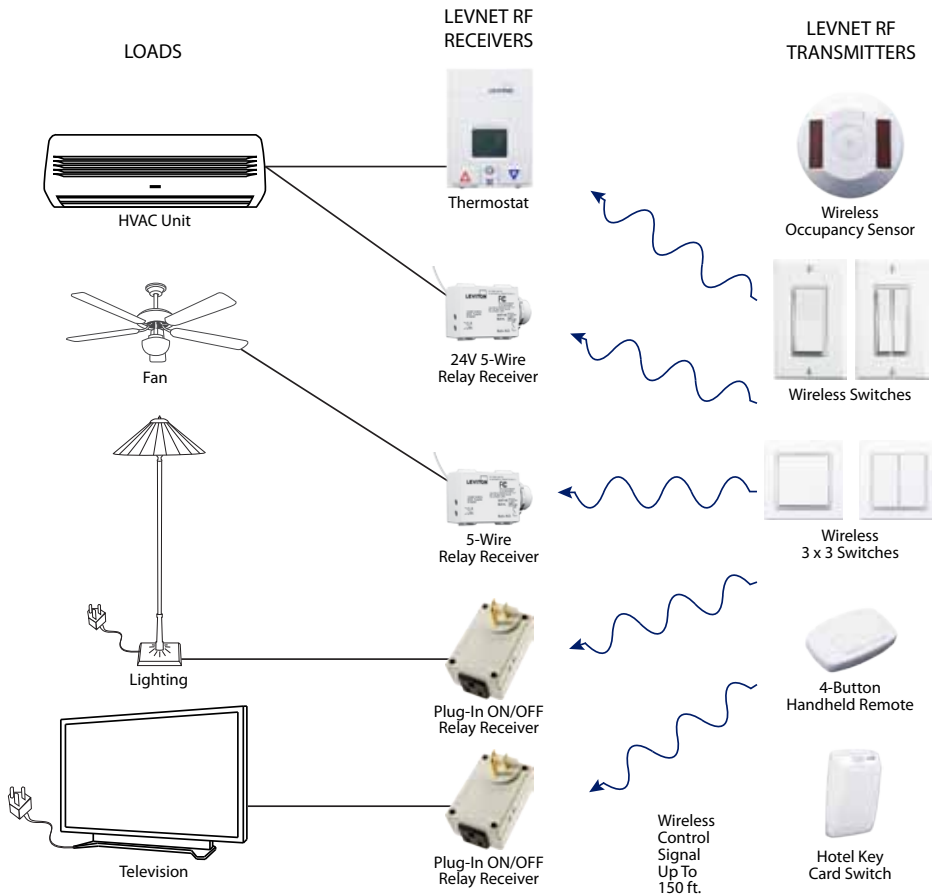
STEP 1   **Determine what LOADS you want to control — lighting, HVAC, lamp, TV, etc.**

STEP 2   **Pick the appropriate RF RECEIVER and/or TRANSCEIVER**

LevNet RF Energy Harvesting Wired-In Receivers

Receives One Way Communication
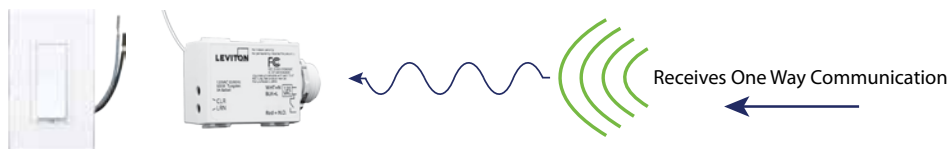
LevNet RF Energy Harvesting Wired-In Transceivers

Receiver   Repeater   Transmitter
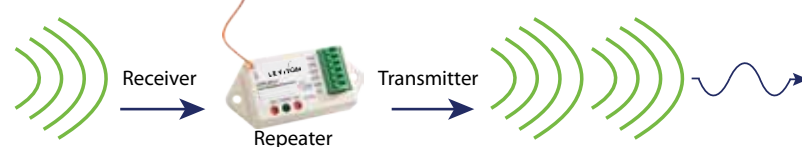
STEP 3   **Pick the appropriate Energy Harvesting RF TRANSMITTER (sensor or switch)**

LevNet RF Energy Harvesting Transmitters

One Way Communication

LevNet RF Energy Harvesting Solutions	
Frequency	315MHz
Range	50-150 feet
Listings	FCC Certified for Wireless Communication (U.S.), I.C. Certified (Canada)*
Warranty	Limited 5-year

*Excludes WSD02-020.
NAFTA and Made in USA models available - visit www.leviton.com/NAFTA or www.leviton.com/USA.

RECEIVERS AND TRANSCEIVERS

WALL SWITCH RECEIVERS

	BASIC WALL SWITCH RECEIVERS with Color Change Kit WSS10-0DZ | WSS10-GDZ Use for single loads and 3-way switching. Condensed pairing for WSC and WSS0S-P only.	ADVANCED WALL SWITCH RECEIVERS with Color Change Kit WSS10-0UZ | WSS10-GUZ Use for larger rooms with multiple loads. Advanced pairing for rocker, momentary and toggle.
Input Voltage	120-230-277VAC	
Power Consumption	120V < 1/2 Watt; 277V < 3/4 Watt	
Memory	Stores up to 10 Transmitter IDs	
Button Pairing Modes	WSS0S-P, WSCxx	Rocker, Momentary and Toggle
Vacancy Confirmation	30 seconds	
Mode	Presentation	
Time Delay	2 min (test), 10, 20, 30 min	
Load Rating	**Incandescent:** 800W @ 120V **Fluorescent Ballasts:** 1200VA @ 120V, 2700VA @ 277V **Motor:** 1/4 HP Load @ 120V **For non-neutral models:** 25W minimum load required (reduce range by 15')	
Additional Listings	ETL/C-ETL: UL508, Title 24 Compliant	

All WSS10 models ship with a Color Change Kit which includes a White, Ivory and Light Almond faceplate.
Gray and Ebony faceplates available in quantities of 25.

RELAY RECEIVER MODULES

	3-WIRE RELAY RECEIVERS WST05-010 WST05-020 WST05-080	5-WIRE RELAY RECEIVERS WST12-010 WST12-020 WST12-080 WST02-R10 Utilizes isolated relay
Memory	Stores up to 30 Transmitter IDs	
Power Supply Input	**WST05-010:** 120VAC, 50/60Hz **WST05-020:** 277VAC, 50/60Hz **WST05-080:** 240VAC, 50/60Hz	**WST12-010:** 120VAC, 50/60Hz **WST12-020:** 277VAC, 50/60Hz **WST12-080:** 240VAC, 50/60Hz **WST02-R10:** 24VAC, 50/60Hz
Max Loads/Contact Ratings	**Tungsten/Incandescent:** **WST05-010:** 500W **WST05-020:** 1150W **WST05-080:** 1000W **Fluorescent Ballast:** 3A **General Duty:** 6A **A300 Pilot Duty:** **WST05-010:** 120VA **WST05-020:** 277VA **WST05-080:** 240VA	**Tungsten/Incandescent:** 1500W @ 120VAC / 500W @ 120VAC; 3000W @ 240VAC / 1000W @ 240VAC; 3400W @ 277VAC / 1100W @ 277VAC **Fluorescent Ballast:** 8A (N.O. Contacts); 2A (N.C. Contacts) **General Duty:** 16A (N.O. Contacts); 5A (N.C Contacts) **A300 Pilot Duty:** 72VA @ 24VAC, 360VA @ 120VAC, 720VA @ 240VAC, 830VA @ 277VAC **Motor Load:** 60 LRA, 10 FLA, 1/2HP @ 120VAC, 1HP @ 240VAC, 1HP @ 277VAC **Other Devices:** 16A
Output Channels	1 FORM A Relay	1 FORM C Relay COM, N.O., N.C.
Time Delay	15 min	
Additional Listings	ETL: UL244A and UL2043, C-ETL: CSAc22.2#14-05 **For WSx02-R10:** ETL: UL244A (pending), C-ETL: CSAc22.2#156 (pending)	

WSTxx models: include ½" threaded nipple, external antenna, and repeater function

PLUG-IN RECEIVERS

	PLUG-IN DIMMER RECEIVER WSG0S-D1T Dimming control of devices	**PLUG-IN ON/OFF RELAY RECEIVER** WSG0S-S1T Relay (on/off) control of devices
Memory	Stores up to 30 unique Transmitter IDs	
Power Supply Input	120VAC, 60Hz	
Dimmer Output	120VAC, 300W max (resistive) incandescent or other dimmable loads only – no motor loads	-
Output Channels	1 dimming or ON/OFF output	-
Output Rating	-	**General:** 6A **Ballast:** 3A **Tungsten:** 500W **Motor:** no motor loads
Time Delay	15 min	
Additional Listings	ETL: UL244A (pending), C-ETL: CSAc22.2#156 (pending)	

ROOM CONTROLLERS AND RELAY RECEIVERS

	2, 3, AND 4-CHANNEL ROOM CONTROLLER WS0RC-200 WS0RC-300 WS0RC-400 Unified control of lights with power packs and low voltage sensors	**2-CHANNEL SHADE CONTROLLER** WS0RC-S00 Enables manual and automated control of window shades and blinds	**4- AND 8-CHANNEL RELAY RECEIVER** WSPAS-LV4 WSPAS-LV8 Connects wireless switches and sensors to new or existing industrial systems
Channels	**WS0RC-200:** 2-in/2-out **WS0RC-300:** 1-in/3-out **WS0RC-400:** 0-in/4-out	-	-
Output Channels	-	1 = up/down 2 = up/down	**WSPAS-LV4:** 4, Form C – N.O. and N.C. Dry Contacts **WSPAS-LV8:** 8, Form A – N.O. Dry Contacts
Power Supply Input	8-30VDC, 40mA	8-30VDC, 40mA	8-28VAC or 8-30VDC, 250mA max
Output Rating	0-30VDC, 130mA max	0-30VDC, 130mA max	2A @ 30VAC/VDC
Relay Driver	30VDC max, 100mA max	30VDC max, 100mA max	-
Repeater	Field configurable	-	-
Time Delay	15 min		

Power supply not included.

DIMMER MODULES

	RF CONSTANT VOLTAGE LED DIMMER WSD02-010	**CONSTANT VOLTAGE LED DIMMER** WSD02-020	**0-10V RF DIMMER WITH ON/OFF CONTROL AND SENSOR INPUT** WSD01-001
Memory	Stores up to 30 Transmitter IDs	-	Stores up to 30 Transmitter IDs
Power Supply Input Rating	8-28VDC, 40mA (not incl. load current)		12-28V, 40mA
Sensor Input Rating	0-28VDC, <1V is low, >3V is high		
Output Rating	Constant Voltage 0-28VDC, 5A max		4mA, 0-10V Output
Output Rating, Switched Output	-	-	5A DC, Isolated, 30VDC max
Input Channels	1 Motion Detector/Sensor Input; 1 Wired Control Switch		1 Motion Detector/ Sensor Input
Output Channels	1 Output PWM Dimming	1 Output 0-10V, 1 Switch Output	
Time Delay	15 minutes		

Power supply not included.

TRANSMITTERS

SENSORS

	OCCUPANCY SENSORS WSC04-IRW | WSC15-IRW | WSC04-I0W	LIGHT SENSORS WSCPC-00W
Power Consumption	Zero	
Photocell	-	0-94.8FC (0-1020 LUX)
Transmission Interval	60 seconds (+/- 10 sec)	Upon >20FC (200 LUX) changes
Minimum Light Required	4FC (40 LUX)	
Minimum Charge Time to Begin Operation	1 minute @ 20FC (200 LUX)	
Maintain Charge Time	3 hours per 24 hours @ 20FC (200 LUX)	
Operating Life at Full Charge	48 hours	
Additional Listings	Title 24 Compliant	

REMOTE SWITCHES Controls virtually any on/off device

	REMOTE SINGLE PUSH ON/OFF DECORA™ SWITCH* WSS0S-P0x	SINGLE/DUAL ROCKER DECORA™ SWITCH* WSS0S-D0x WSS0S-D2x	HANDHELD 4-BUT-TON REMOTE WSS0S-R0W	HOTEL KEY CARD SWITCH WSS0S-H0W	3 X 3 SINGLE/DUAL ROCKER SWITCH WSS0S-E0W WSS0S-E0B WSS0S-E2W WSS0S-E2B
Buttons	1 Button	**WSS0S-D:** 2 Buttons (1 Rocker) **WSS0S-D2:** 4 Buttons (2 Rockers)	4 Buttons (2 Rockers)	-	**WSS0S-E:** 2 Buttons (1 Rocker) **WSS0S-E2:** 4 Buttons (2 Rockers)
Card Slot	-	-	-	1 (card IN, card OUT)	-
Output Channels	Only limited by number of Receivers in range				
Addressing	Factory set unique ID (1 of 4 billion)				

* Available in White (-W), Ivory (-I), Light Almond (-T), Gray (-G) and Ebony (-E).

	THERMOSTAT WS0TH -S00 Adjusts temperature based on "occupied" and "unoccupied" signals
Input Voltage	24VAC
Load Rating	1.5A/circuit
Temperature Monitor Range	32°F to 99.9°F (0°C to 37.7°C)
Temperature Set Point Range	60°F to 85°F (15.5°C to 29.5°C)
Sampling Rule	Every 5 seconds
Fan Control	Selectable: Auto Cycle, Low, Medium, High, Economy, Off
Time Delay	5 sec to 15 min
Memory	Stores up to 30 Switch IDs
Heat/Cool Control	1 Heat and 1 Cool circuit

SLT TRANSMITTERS

	SWITCH LEG TRANSMITTER WSSLT-010 | WSTLT-010 | WSSLT-R10 Replaces wires between an electrical load and a switch with an RF control signal to control loads	4-CHANNEL SLT TRANSMITTER WSSLT-GP0 Connects 4 GPIO signals from the HVAC controller to control lighting
Power Supply Input	**WSxLT-010:** 120VAC, 50/60Hz **WSSLT-R10:** 24VAC, 50/60Hz	8-28VDC, 40mA
Addressing	Factory set unique ID (1 of 4 billion)	
Additional Listings	ETL: UL244A, C-ETL: CSAc22.2#14-05	–

ACCESSORIES

	RS-232 SERIAL BOX DATA INTERFACE WS0RF-300 Connects to any system that uses an RS-232 serial port	SIGNAL STRENGTH METER WSMET-010 Verifies whether the installation of LevNet RF products are possible at the positions planned
Power Supply Input	8-28VAC or 8-30VDC	-
Current	25mA @ 12VDC, 15mA @ 24VDC	-
Power Supply	Not included	9VDC battery
Receiver Sensitivity	-	-95dBm
Channel Bandwidth	-	280kHz
RF Data Rate	-	120kbps

BASIC LEVNET RF SOLUTIONS

Basic Lighting

Wireless Switches

Wireless Control Signal Up To 150 ft.

Plug-In ON/OFF Relay Receiver

OR
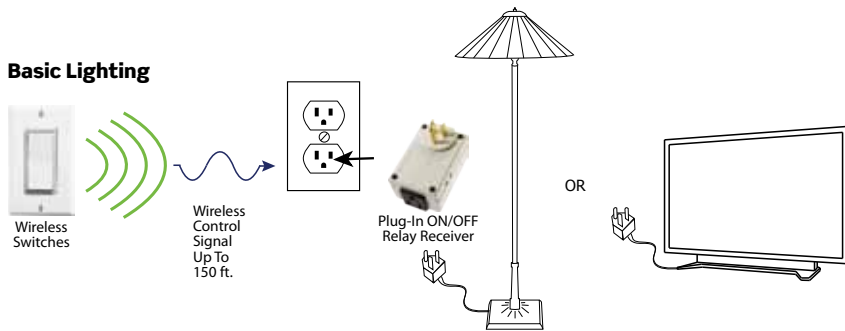
3-Way or Multi-Location Switching

Wireless Remote Switch

Wireless Control Signal Up To 150 ft.

Wall Switch Receiver
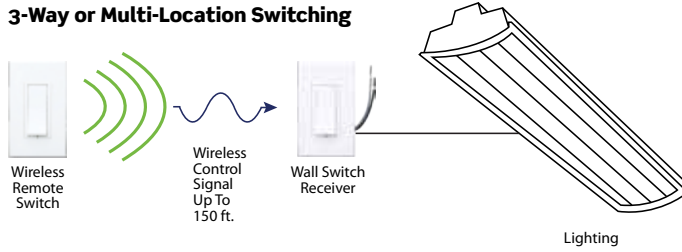
Lighting

Daylight Harvesting with Bi-Level Control

Wireless Dual Rocker Switch

Wireless Light Sensor

3-Wire Relay Receiver

Wireless Control Signal Up To 150 ft.

3-Wire Relay Receiver

Lighting
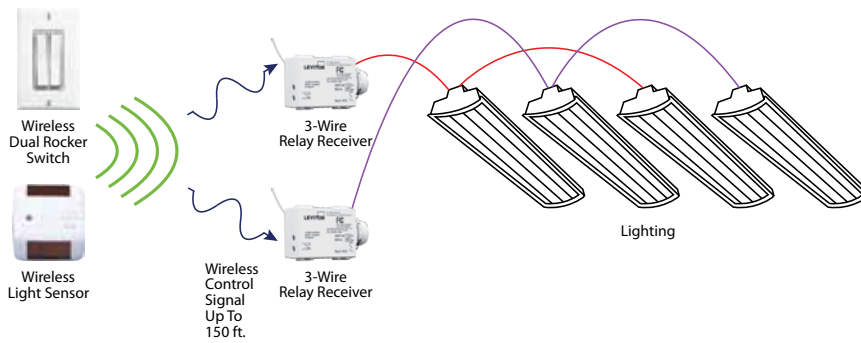
Occupancy Sensor with Bi-Level Control

Wall Switch Receiver

Wireless Occupancy Sensor

Wireless Control Signal Up To 150 ft.

Wall Switch Receiver

Lighting
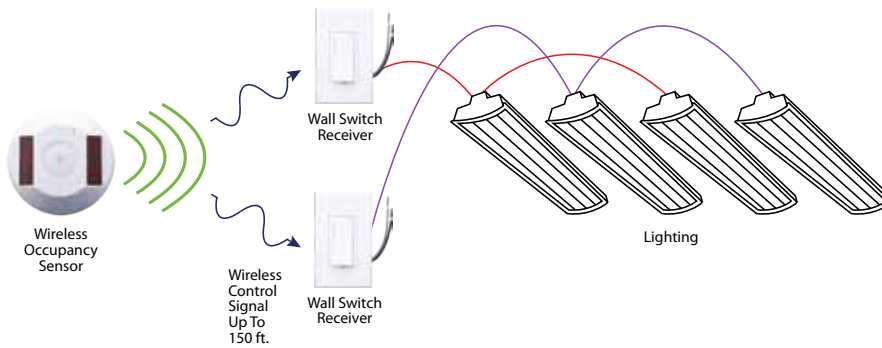
Hospitality Application

Wall Switch Receiver

Lighting

Hotel Key Card Switch

Wireless Control Signal Up To 150 ft.

Thermostat

HVAC Unit
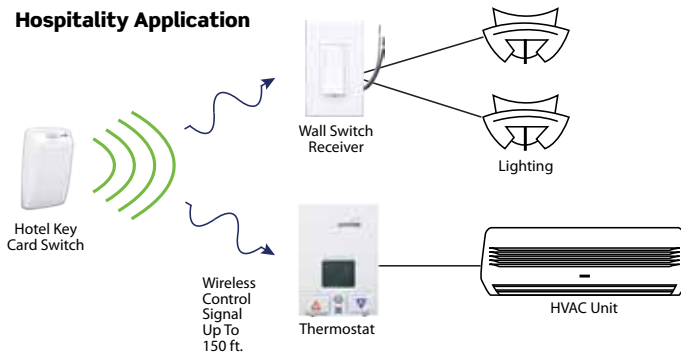
LEVNET RF ENERGY HARVESTING SOLUTIONS

ENERGY HARVESTING SENSORS (USE WITH WSS10-0DX, WSS10-GDX, OR WSS0S-P0X)

DESCRIPTION	CAT. NO.*	COVERAGE	COLOR
Low Profile Self-Powered PIR Occupancy Sensor, 450SF	WSC04-IRW	360°, 450SF	W
Low Profile Self-Powered PIR Occupancy Sensor, 1500SF	WSC15-IRW	360°, 1500SF	W
Self-Powered PIR Occupancy Sensor, 450SF	WSC04-IOW	360°, 450SF	W
Self-Powered Light Sensor, 0-95 FC	WSCPC-00W	360°, 50-150SF	W

WALL SWITCH RECEIVERS

DESCRIPTION	CAT. NO.*	RATING	COLOR
Basic RF Wall Switch Receiver with Color Change Kit (use with WSC and WSS0S-P only)	WSS10-0DZ	Incandescent: 800 @ 120V, 2000W @ 277V Fluorescent Ballasts: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4 HP Load @ 120V	W, I, T, G, E
Basic RF Wall Switch Receiver, Non-Neutral with Color Change Kit (use with WSC and WSS0S-P only)	WSS10-GDZ	Incandescent: 800 @ 120V, 2000W @ 277V Fluorescent Ballasts: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4 HP Load @ 120V Non-Neutral: 25W minimum load required (reduce range by 15')	W, I, T, G, E
Advanced RF Wall Switch Receiver with Color Change Kit (use with WSC and WSS0S-P only)	WSS10-0UZ	Incandescent: 800 @ 120V, 2000W @ 277V Fluorescent Ballasts: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4 HP Load @ 120V	W, I, T, G, E
Advanced RF Wall Switch Receiver, Non-Neutral with Color Change Kit (use with WSC and WSS0S-P only)	WSS10-GUZ	Incandescent: 800 @ 120V, 2000W @ 277V Fluorescent Ballasts: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4 HP Load @ 120V Non-Neutral: 25W minimum load required (reduce range by 15')	W, I, T, G, E

Note: All WSS10 models ship with a Color Change Kit which includes a White, Ivory and Light Almond wall plate. Gray and Ebony wallplates available in quantities of 25.

REMOTE SWITCHES

DESCRIPTION	CAT. NO. *	COLOR
Single Push ON/OFF Decora™ Remote Switch	WSS0S-P0X	W, I, T, G, E
1-Gang Single Rocker Decora™ Switch	WSS0S-D0X	W, I, T, G, E
1-Gang Dual Rocker Decora™ Switch	WSS0S-D2X	W, I, T, G, E
Handheld 4-Button Remote	WSS0S-R0W	W
Hotel Key Card Switch	WSS0S-H0W	W
Thermostat, 4VAC	WS0TH-S00	W
3 x 3 Single Switch	WSS0S-E0X	W, E
3 x 3 Dual Switch	WSS0S-E2X	W, E

RELAY RECEIVER MODULES

DESCRIPTION	CAT. NO. *	COLOR
3-Wire Relay Receiver, Threaded Mount, 120VAC, 500W	WST05-010	W
3-Wire Relay Receiver, Threaded Mount, 277VAC, 1200W	WST05-020	W
3-Wire Relay Receiver, Threaded Mount, 240VAC, 1000W	WST05-080	W
5-Wire Relay Receiver, Threaded Mount, 120VAC, 1500W	WST12-010	W
5-Wire Relay Receiver, Threaded Mount, 2770VAC, 3200W	WST12-020	W
5-Wire Relay Receiver, Threaded Mount, 240VAC, 3000W	WST12-080	W
5-Wire Relay Receiver, Threaded Mount, 24VAC, 300W	WST02-R10	W

PLUG-IN RECEIVERS

DESCRIPTION	CAT. NO. *	COLOR
Plug-In Dimmer Receiver	WSG0S-D1T	T
Plug-In ON/OFF Relay Receiver	WSG0S-S1T	T

ROOM CONTROLLERS AND RELAY RECEIVERS

DESCRIPTION	CAT. NO. *	COLOR
2-Channel Room Controller, 2 Inputs/2 Outputs, 8-30VDC	WS0RC-200	W
3-Channel Room Controller, 1 Input/3 Outputs, 8-30VDC	WS0RC-300	W
4-Channel Room Controller, 0 Input/4 Outputs, 8-30VDC	WS0RC-400	W
2-Channel Shade Controller, 8-30VDC	WS0RC-S00	W
4-Channel Relay Receiver, 8-30VAC or 8-30VDC	WSPAS-LV4	W
8-Channel Relay Receiver, 8-30VAC or 8-30VDC	WSPAS-LV8	W

DIMMER MODULES

DESCRIPTION	CAT. NO.*	COLOR
RF Constant Voltage LED Dimmer	WSD02-010	W
Constant Voltage LED Dimmer	WSD02-020	W
010V RF Dimmer with ON/OFF Control and Sensor Input	WSD01-001	W

SLT TRANSMITTERS

DESCRIPTION	CAT. NO.*	COLOR
SLT Circuit Interlock Transmitter, 120VAC	WSSLT-010	W
SLT Circuit Interlock Transmitter, 240VAC	WSSLT-R10	W
4-Channel SLT Transmitter, 8-28VDC	WSSLT-GP0	W
SLT Threaded Mount, 120 VAC	WSTLT-010	W

ACCESSORIES

DESCRIPTION	CAT. NO. *	COLOR
RS-232 Serial Box Data Interface	WS0RF-300	W
Signal Strength Meter	WSMET-010	W

* Colors available as listed, add suffix to catalog number as follows: Ivory (-I), White (-W), Light Almond (-T), Gray (-G), Ebony (-E).

LEVNET RF PRODUCT COMPATIBILITY MATRIX

Legend: x = Indicated Compatibility; p = Indicates Partial Support (PTM Mode ONLY); With Leviton v1.19 or newer firmware

PART NUMBER - DESCRIPTION	WSC04-I0W	WSC15-I0W	WSC04-IRW	WSC15-IRW	WSCPC-00W	WSS10-0DX	WSS10-0UX	WSS10-GDX	WSS10-GUX	WSS0S-P0x	WSS0S-D0x	WSS0S-D2x	WSS0S-R0w	WSS0S-E0x	WSS0S-E2x	WSS0S-H0w	WST05-010	WST05-020	WST05-080	WST12-010	WST12-020	WST12-080	WST02-R10	WSG0S-D1T	WSG0S-S1T	WS0RC-200	WS0RC-300	WS0RC-400	WS0RC-S00	WSD01-001	WSD02-010 w/	WSD02-010 w/o	WSPAS-LV4	WSPAS-LV8	WS0TH-S00	WSSLT-010	WSTLT-010	WSSLT-R10	WSSLT-GP0	WS0RF-300	WSMET-010
WIRELESS OCC SNSRS AND LIGHT SENSOR																																									
WSC04-I0W — PIR Occupancy Sensor, 450SF						x	x	x	x								x	x	x	x	x	x	x		x	x	x	x		x	x				x					x	x
WSC15-I0W — PIR Occupancy Sensor, 1500SF						x	x	x	x								x	x	x	x	x	x	x		x	x	x	x		x	x				x					x	x
WSC04-IRW — New PIR Occupancy Sensor, 450SF						x	x	x	x								x	x	x	x	x	x	x		x	x	x	x		x	x				x					x	x
WSC15-IRW — New PIR Occupancy Sensor, 1500SF						x	x	x	x								x	x	x	x	x	x	x		x	x	x	x		x	x				x					x	x
WSCPC-00W — New Self Powered Light Sensor																	x	x	x	x	x	x	x																	x	x
WIRELESS RECEIVER SWITCHES																																									
WSS10-0DX — Decora™ Wall Switch Receiver (Basic)	x	x	x	x						x																														x	
WSS10-0UX — Decora™ Wall Switch Receiver (Advanced)	x	x	x	x						x	x	x	x	x	x	x										x	x									p	p	p	p	x	
WSS10-GDX — Decora™ Wall Switch Receiver, Non-Neutral (Basic)	x	x	x	x						x																														x	
WSS10-GUX — Decora™ Wall Switch Receiver, Non-Neutral (Advanced)	x	x	x	x						x	x	x	x	x	x	x										x	x									p	p	p	p	x	
WIRELESS REMOTE SWITCHES																																									
WSS0S-P0x — Single Push ON/OFF Remote Switch						x	x	x	x								x	x	x	x	x	x	x	x	x	x	x	x							x					x	x
WSS0S-D0x — 1-Gang Single Rocker Decora™ Switch							x		x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x
WSS0S-D2x — 1-Gang Dual Rocker Decora™ Switch							x		x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x
WSS0S-R0w — Handheld 4-Button Remote							x		x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x
WSS0S-E0x — 3 x 3 Single Switch							x		x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x
WSS0S-E2x — 3 x 3 Dual Switch							x		x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x
WSS0S-H0w — Hotel Key Card Switch							x		x								x	x	x	x	x	x	x	x	x	x	x	x								x	x	x		x	x
WIRELESS LINE VOLTAGE RECEIVERS																																									
WST05-010 — 3-Wire 500 Relay Receiver, 120VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST05-020 — 3-Wire 1200 Relay Receiver, 277VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST05-080 — 3-Wire 1000 Relay Receiver, 240VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST12-010 — 5-Wire 1500 Relay Receiver, 120VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST12-020 — 5-Wire 3200 Relay Receiver, 277VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST12-080 — 5-Wire 3000 Relay Receiver, 240VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WST02-R10 — 5-Wire 300 Relay Receiver, 24VAC (Threaded)	x	x	x	x	x					x	x	x	x	x	x	x																				x	x	x	x		
WIRELESS PLUG-IN RECEIVERS																																									
WSG0S-D1T — Plug-In Dimmer Receiver										x	x	x	x	x	x	x																								x	
WSG0S-S1T — Plug-In ON/OFF Relay Receiver	x	x	x	x						x	x	x	x	x	x	x										x	x									x	x	x	x	x	
WIRELESS LOW VOLTAGE RECEIVERS																																									
WS0RC-200 — 2-Ch. Room Controller, 2 Inputs/2 Outputs, 8-30VDC	x	x	x	x			x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							x									x	x	x
WS0RC-300 — 3-Ch. Room Controller, 1 Input/3 Outputs, 8-30VDC	x	x	x	x			x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							x									x	x	x
WS0RC-400 — 4-Ch. Room Controller, 0 Input/4 Outputs, 8-30VDC	x	x	x	x						x	x	x	x	x	x	x										x	x									x	x	x	x	x	
WS0RC-s00 — 2-Channel Shade Controller, 8-30VDC											x	x	x	x	x																					x	x	x	x	x	
WSD01-001 — 0-10V Dimmer Module	x	x	x	x																																x	x	x	x	x	
WSD02-010 — Constant Voltage LED Dimmer w/ Wireless	x	x	x	x																																x	x	x	x	x	
WSD02-010 — Constant Voltage LED Dimmer w/o Wireless																																				x	x	x	x		
WSPAS-LV4 — 4-Channel Relay Receiver, 8-30VAC or 8-30VDC											x	x	x	x	x	x																				p	p	p	p	x	
WSPAS-LV8 — 8-Channel Relay Receiver, 8-30VAC or 8-30VDC											x	x	x	x	x	x																				p	p	p	p	x	
WS0TH-S00 — Thermostat, 24VAC	x	x	x	x						x	x	x	x	x	x	x										x	x									x	x	x	x	x	
WIRELESS TRANSMITTERS																																									
WSSLT-010 — SLT Circuit Interlock Transmitter, 120VAC							p		p								x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	p	p	x					x	x
WSTLT-010 — SLT Circuit Interlock Transmitter, 120VAC (Threaded)							p		p								x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	p	p	x					x	x
WSSLT-R10 — SLT Circuit Interlock Transmitter, 240VAC							p		p								x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	p	p	x					x	x
WSSLT-GP0 — 4-Channel SLT Transmitter, 8-28VDC							p		p								x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	p	p	x					x	x
WIRELESS ACCESSORIES																																									
WS0RF-300 — RS-232 Serial Box Data Interface	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x								x	x	x	x	x	x
WSMET-010 — Signal Strength Meter	x	x	x	x	x					x	x	x	x	x	x	x										x	x									x	x	x	x	x	x

x Indicated Compatibility
p Indicates Partial Support (PTM Mode ONLY)
With Leviton v1.19 or newer firmware

miniZ™ INTELLIGENT DAYLIGHT MANAGEMENT SYSTEM

Combines Occupancy Sensing, Daylight Harvesting and Flexible Lighting Control

The miniZ combines occupancy sensing, daylight harvesting and flexible lighting control functions in a single extremely easy-to-install package. miniZ is the first system to offer self-configuring daylight harvesting system with ladderless commissioning for install-and-forget convenience. The performance, features and capabilities of the miniZ provide a powerful package at an affordable price.

FEATURES

- Autocal™ (patent-pending) automatic photocell calibration
- Ladderless commissioning™ provides install–and–forget convenience
- Automatic correction for Light Loss Factor
- Recognizes and corrects for lumen maintenance issues
- Cost-effective energy code compliance
- Automatic closed- or open-loop, multi-zone daylight harvesting control
- Convenient occupancy sensor and photocell integration
- Simplified daylight harvesting with full range dimming
- Input for external time clock integration, load shedding and emergency override
- Simplified integration with emergency systems
- Controls maximum lighting output for additional energy savings potential
- Daylight switching, full range 0-10V sinking fluorescent dimming and network models available
- Accepts input from local momentary or maintained switches as well as low-voltage input from photocells and occupancy sensors for a comprehensive yet easily installed energy management solution
- Accepts multi-voltage (120, 277, 347V) input; 10W Max, 50/60Hz
- Factory pre-tested
- 5-Year Warranty

APPLICATIONS

- Offices
- Classrooms
- Skylit spaces

TYPICAL MINIZ INSTALLATION
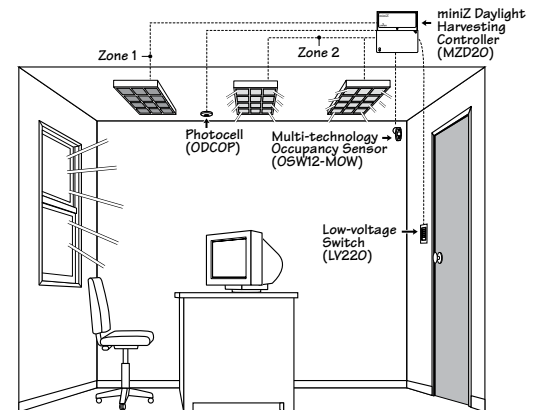
miniZ INTELLIGENT DAYLIGHT MANAGEMENT SYSTEM

(20A output relays (120/277V); 15A output relays (347V); Fluorescent, non-dimmed and 1-10V dimmed (0,2 or 3 zones); 120mA/24V output for operation of occupancy sensors, etc.)

	20A POWER CIRCUITS	0-10V CAT. NO. DIMMING CIRCUITS	CONTROL INPUT VOLTAGE
MZB00-102	2	0	120/277VAC
MZD20-102	2	2	120/277VAC
MZD30-101	1	3	120/277VAC
MZB00-C02	2	0	220/347VAC
MZD20-C02	2	2	220/347VAC
MZD30-C01	1	3	220/347VAC
MZB02-102	2	0	120/277VAC
MZD22-102	2	2	120/277VAC
MZB02-C02	2	0	220/347VAC
MZD22-C02	2	2	220/347VAC

LOW VOLTAGE SWITCHES

Leviton offers a comprehensive line of commercial- and industrial-grade switches, including zone-control lighting switches and switches for low voltage AC or DC energy control systems such as thermostats, fan controls and those related to solar and wind energy. They are perfect in locations where it is important to maintain the look and feel of conventional AC switches.

ORDERING INFORMATION

CAT. NO.	DESCRIPTION	COLOR
LV200-00W	Low voltage 5-button dimming ON/OFF controller	White
LV240-00W	Low voltage 2-button switching ON/OFF controller	White
01081-00I	Low voltage momentary contact toggle switch	Ivory
01081-00W	Low voltage momentary contact toggle switch	White
01081-0GY	Low voltage momentary contact toggle switch	Gray
56081-02I	Low voltage momentary contact Decora® rocker switch	Ivory
56081-02W	Low voltage momentary contact Decora® rocker switch	White
12021-02I	Low voltage standard toggle switch	Ivory
12021-02W	Low voltage standard toggle switch	White
56021-02I	Low voltage Decora® rocker switch	Ivory
56021-02W	Low voltage Decora® rocker switch	White
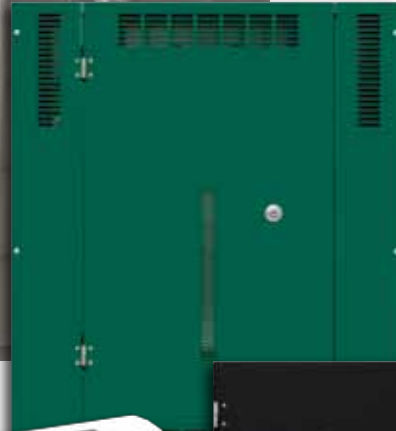
GREENMAX® RELAY CONTROL PANELS

Smart Lighting Control

Designed for the contractor, specifier and end user, GreenMAX Relay Control Panels offer the best performance, reliability, flexibility and energy savings of any relay control available. Featuring a 25,000A Short Circuit Current Rating (SCCR), GreenMAX easily integrates various lighting control strategies like switching, dimming, behavior controls, scheduling, occupancy sensing and daylight harvesting. Programming and monitoring GreenMAX is quick and simple with a portable Handheld Display Unit (HDU) that allows for onsite or remote access. The modular design allows total installation flexibility and labor savings as well as easy expansion opportunities.

FEATURES

- Scalable solution offers future expansion opportunities
- Easy energy code compliance and LEED point eligibility
- Highest Short Circuit Current Rating (SCCR) of 25,000A at 277VAC for maximum equipment performance
- Robust latching Relay Modules are rated 30A general fluorescent ballast and 20A incandescent in 1-pole and 2-pole configurations with the same footprint, available with or without the Return to Closed (RTC) functionality
- Dimming control with Dimming and Switching Relay Modules
- Daylight harvesting capabilities
- Programming and monitoring of the system is conveniently done with a portable Handheld Display Unit (HDU) and simplified Behavior settings in the space being controlled rather than from the electrical room
- Modular system was designed to ship the empty cabinet enclosure, complete with doors and covers, to the job site to make installation of the cabinet and conduits easier
- Supports native network communication protocols – BACnet/IP, Ethernet, and LumaCAN – to simplify configuration and ensure start simplicity
- Accommodates low voltage inputs such as occupancy sensors, photocells, contact closures, and switches – connect using the onboard Low Voltage Input Card or remotely in the Remote Input Cabinet
- Wiring area covers and isolation barriers conceal the circuit wiring and provide maximum arc flash protection when installed allowing work to be done with power on without chance of exposure to high voltage – no Arc Flash Suit needed
- Custom engraving available on digital switches and wall plates

APPLICATIONS

- Heavy retrofit applications
- New construction projects
- Government facilities
- Office buildings
- Hospitals/medical offices
- Universities
- Restaurants
- Large campuses
- Any other location where centralized lighting control, programming, and monitoring are required

Photocell   Occupancy Sensor

0-10V BALLAST

Loads

LumaCan

GreenMAX 16 - Relay Cabinet

Digital Switch - 1 button

Digital Switch - 2 buttons

Digital Switch - 4 buttons

Photocell   Occupancy Sensor

Remote Low Voltage Cabinet

Low Voltage Switch

0-10V BALLAST

GreenMAX 8 - Relay Cabinet   Loads

Keyswitch

Digital Switch - 4 Button Dimmer Control

USB Port LumaCAN Port Ethernet Port

Command Module

Power Supply Main Processor Low Voltage 16-Input Card Communication Link (Between Command Module and Relay Insert Panel)

Wiring Diagram

Relay Insert Panel

Lock

Right Panel Cover

Door with Split Hinges

Left Panel Cover

Grounding Points

Lower Ventilation Cover

Manual Actuator

2-Pole Relay

Power and Lighting Wire Way

GREENMAX INNOVATION

GREENMAX SYSTEM

- Industry leading 25,000A Short Circuit Rating (SCCR) at 277 VAC withstands circuit faults for increased safety

- Native communication network protocols—BACnet IP, Ethernet and LumaCAN—are built into each Command Module to offer unparalleled connectivity; no additional parts or adapters are needed to communicate with other products utilizing these protocols

- Modular system includes separate empty Cabinet enclosures, Command Modules and Relay Insert Panels to minimize handling and subsequent damage during the installation process

- Easy updates—loading firmware is automated and only requires plugging in a flash memory card and pressing a button

- System can be connected via Ethernet or LumaCAN networks

- All network connections are made with RJ45 connectors and cabling is standard CAT6

- Low Voltage Remote Input Card can be combined with LevNet RF Self-Powered Wireless Solutions to create a wireless hybrid system of inputs

- All programming and configurations are stored in a MicroSD memory card, which eliminates the need for non-volatile memory

GREENMAX RELAY CABINETS

- GreenMAX cabinet has a 25,000A at 277 VAC Short Circuit Current Rating (SCCR) for increased reliability and durability
- Empty cabinet enclosures ship separately from electronic compo-nents – Command Module and Relay Insert Panel – making the cabi-nets lighter and easier to handle and requiring less effort to install
- Empty cabinet also provides unobstructed access to conduit entry points and reduces the risk of damaging electronics
- Relay cabinets can hold 8, 16, 32 and 48 relays, each with unlimited and flexible configuration capabilities; the 0-10 VDC dimming and switching relay models can be installed in any available relay slot
- Increased arc flash protection—the cabinet door opens to expose only the low voltage area of the cabinet
- Remote Low Voltage Panels allow the connection points of the low voltage wiring enclosure to be installed closer to the devices it serves, reducing wiring and labor costs and making commissioning or troubleshooting easier
- Takes only eight screws to assemble the internal Relay Insert Panels and Command Module of a 48-Relay GreenMAX cabinet
- A single relay or group of relays can be separated by sliding an isola-tion barrier between relays to eliminate the need for an additional cabinet to handle emergency loads and allows voltages from mixed sources in the same cabinet
- Native communication network protocols—BACnet/IP and Ethernet—are built into each Command Module to offer unparalleled connec-tivity; no additional devices are needed to communicate with other products utilizing these protocols

GREENMAX RELAY MODULES

- All GreenMAX relay modules have a 25,000A at 277 VAC Short Circuit Current Rating (SCCR) for increased reliability and durability
- Rated at 30A general fluorescent ballast and 20A incandescent, HID, electronic ballast
- All GreenMAX Relay Modules are 1-pole or 2-pole latching relay types that reduce parasitic energy use. All relay modules are the same physical size, allowing the optimal mix of relays to be customized for each application
- Self-contained Dimming and Switching Relay Module in 1-pole configurations features daylight harvesting capabilities
- All four wires required for 0-10V dimming ballast wiring connect directly to the module—no additional control board required
- All relays are latching with a manual actuator that allows users to manually bypass the system to turn lights ON or OFF without CPU power

HANDHELD DISPLAY UNIT (HDU)

- Allows programming, system configuration, and scheduling to be done in the space being controlled rather than the electrical room to make commissioning and set-up functions easier

- Configure and control the entire GreenMAX system (or multiple systems) from any convenient network access point—relay cabinets, switches, or remote low voltage cabinets with just one HDU

- Provides interface with all devices and relays in the system

- Can be stored in the cabinet or designated docking station

- Communicate via LumaCAN

- 7 hour run time on a single full charge

- Astronomical clock – sunrise/sunset

- HDU does not need to be connected to system during operation. The full computing power of a PC remains in the palm of your hand

- Comes complete with a set of rechargeable batteries

GREENMAX SWITCHES

- GreenMAX digital key switch provides secure button presses on the network

- Available in 1, 2, and 4 button configurations, and key switch version with custom engraved labeling available on switch buttons and screwless wall plates

- Switch colors available: white, light almond, ivory, gray, black, and red; all come with a matching wallplate. Keyswitch comes with a stainless steel wallplate and tamper-resistant screws (tool included)

- Each digital switch button has a green LED pilot light to report the corresponding relay state

- Switches can be ganged together in wallboxes (multi-gang wallplate sold separately)

- RJ45 connectors to provide inline connection to the LumaCAN network

- Any 4-button switch model can be configured to control 0-10 VDC dimming circuits

- Easy to access port on top of switch provides connectivity for the GreenMAX HDU

PROGRAMMING GREENMAX WITH LIGHTING BEHAVIORS

LIGHTING CUSTOMIZATION

GreenMAX controls allow different Behavior settings to be programmed throughout the day. Using the HDU, any room can be set with just a few button selections:

• Select the Behavior desired and time Behavior will take place

• Choose any additional Behavior transitions and the time transition will take place

• Optional override to sunrise/sunset astronomical clock prevents lights from activating prematurely in summer or too late in winter

• Set Behaviors to scale on a daily, weekly, monthly or holiday schedule

• Up to 24 Behaviors per 24 hour period can be programmed and can be as close together as one minute

SIMPLE AND EASY PROGRAMMING

• Using the HDU, select the number on the screen corresponding with the desired Behavior

• Enter time and dates to be in effect and any corresponding Behavior Modifiers. Behaviors can be set for entire system or individual rooms/relays

BEHAVIORS						
Number	Description	Occupancy Sensor	Photocell	Switch	Time	
B1	Lights turned ON with the switch. Can be turned OFF with switch. Occupancy Sensor will turn OFF upon vacancy.	OFF	-	ON/OFF	-	
B2	Lights turned ON with the Occupancy Sensor. Can be turned OFF/ON with switch. Occupancy Sensor will turn OFF upon vacancy.	ON/OFF	-	ON/OFF	-	
B3	Occupancy sensor turns lights ON/OFF.	ON/OFF	-	-	-	
B4	Switch ON/OFF.	-	-	ON/OFF	-	
B5	Time triggers a Blink Warn sequence, an OFF blink followed by a variable ON delay. Switch interrupts sequence and starts override timer. Will automatically turn OFF relay if override timer reaches zero.	-	-	ON/OFF	Blink/OFF	
B6	Turn ON at specific time.	-	-	-	ON	
B7	Turn OFF at specific time.	-	-	-	OFF	
B8	Occupancy sensor turns ON lights with occupancy. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows control by Occupancy Sensor. Occupancy Sensor turns OFF lights with vacancy.	ON/OFF	OFF	-	-	
B9	Switch turns ON/OFF lights. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows control by Occupancy Sensor. Occupancy Sensor turns OFF lights with vacancy.	OFF	OFF	ON/OFF	-	
B10	Occupancy Sensor turns ON lights with occupancy. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows Occupancy Sensor control. Switch can turn ON/OFF lights by over-riding Occupancy Sensor control. Occupancy Sensor will turn OFF lights upon vacancy.	ON/OFF	OFF	ON/OFF	-	
B11	Switch ON/OFF. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point allows Switch control.	-	OFF	ON/OFF	-	
B12	Turn ON at specific time. Measured light levels above Photocell trigger point turns OFF or keep lights OFF, below set-point reliquishes control to the constant ON state.	-	OFF	-	ON	

BEHAVIORS, CONT.

AUTO-PROMPT CUSTOMIZATIONS		
Name	Description	Value Range
Switch OFF Delay	When relay is turned ON with the switch, length of time before relay will automatically turn OFF.	2.5, 5, 10, 15, 30, 60, 90, 120 minutes, and Constant ON
Occupancy Sensor OFF Delay	When vacancy is determined, length of time before relay will automatically turn OFF.	0, 0.5, 2.5, 5, 10, 20, 30 minutes
Photocell Delay	Delay before action is taken after a Photocell trigger point has been crossed.	0, 0.5, 2.5, 5, 10, 20 minutes
Blink Warn - Blink Duration	The length of the OFF Blink used to notify occupants than an OFF sequence has been initiated.	0.5-25.4 seconds
Blink Warn - Delay	This period follows the Blink and lasts the length of the specified time. If button is pressed during this period, the Delay timer stops and the Override Time starts. If no buttons are pressed, the lights will turn OFF.	1-254 minutes
Blink Warn - Override Time	The relay will remain ON for the duration of this timer. A new Blink Warn sequence will be initialized at the end of this period. If the relay had been OFF previously and a button is pressed to turn the relay ON, this timer will be started again.	4-254 minutes

ORDERING INFORMATION

CAT. NO	DESCRIPTION
Tubs and Covers (all cabinets are surface mount with a locking door)	
R08TC-100	GreenMAX Relay Cabinet, 8-Relay Size, NEMA 1
R16TC-100	GreenMAX Relay Cabinet, 16-Relay Size, NEMA 1
R32TC-100	GreenMAX Relay Cabinet, 32-Relay Size, NEMA 1
R48TC-100	GreenMAX Relay Cabinet, 48-Relay Size, NEMA 1
Command Modules (includes power supply and main processor unit)	
RPM00-100	Main Command Module, 100-277VAC, no inputs
RPM08-108	Main Command Module with 8-Port Low Voltage Input Card, 100-277VAC, 50/60Hz
RPM16-116	Main Command Module with 16-Port Low Voltage Input Card, 100-277VAC, 50/60Hz
Panel Interiors (all panels are 16-position, rated 30A, 120-230-277/347VAC, 50/60Hz)	
R0800-000	Relay Insert Panel, Empty with (8) Spaces
R1600-000	Relay Insert Panel, Empty with (16) Spaces
R1616-1CB	Relay Insert Panel with (16) 1-Pole Basic Relays
R1616-1DS	Relay Insert Panel with (16) 1-Pole
R1616-1TB	Relay Insert Panel with (16) 1-Pole Basic Relays
R1616-2CB	Relay Insert Panel with (16) 2-Pole RTC Relays
R1616-2TB	Relay Insert Panel with (16) 2-Pole Basic Relays
Handheld Display Unit (HDU)	
RHDU1-000	Handheld Display Unit, Cabinet Mounting
RHDU1-001	Handheld Display Unit, Mounting Bracket Requires 2 Gang Back Box

CAT. NO	DESCRIPTION
Remote Inputs with Power Supply (all remote inputs are rated 100-277VAC)	
RLV08-108	Remote Low Voltage Input Cabinet, 8 Inputs, NEMA 1 Enclosure
RLV16-116	Remote Low Voltage Input Cabinet, 16 Inputs, NEMA 1 Enclosure
Relays (all relays are rated 30A, 120-230-277/347VAC, 50/60Hz)	
RELAY-1CB	GreenMAX Latching Relay, 1-Pole RTC Basic
RELAY-1DS	GreenMAX Latching Relay, 1-Pole Dimming and Switching
RELAY-1TB	GreenMAX Latching Relay, 1-Pole Basic
RELAY-2CB	GreenMAX Latching Relay, 2-Pole RTC
RELAY-2TB	GreenMAX Latching Relay, 2-Pole Basic
RELAY-BFM	Blank Filler Module
RGBAR-008	GreenMAX Voltage Barriers for 8 Relay Cabinets
RGBAR-016	GreenMAX Voltage Barriers for 16, 32 and 48 Relay Cabinets
Digital Switches	
RDGSW-1DX	GreenMAX Digital Switch, 1-Button
RDGSW-2DX	GreenMAX Digital Switch, 2-Button
RDGSW-4DX	GreenMAX Digital Switch, 4-Button
RDGSW-1KS	GreenMAX Keyswitch
RDGSW-1KX	GreenMAX 1 Button Color Change Kit
RDGSW-2KX	GreenMAX 2 Button Color Change Kit
RDGSW-4KX	GreenMAX 4 Button Color Change Kit

Replace x to indicate color: (W) = White, (I) = Ivory, (T) = Light Almond, (G) = Gray
Note: See page 71 for Ordering Information on Low Voltage Switches

EZ-MAX™ PLUS RELAY CONTROL PANELS

EZ-MAX Plus relay lighting control panels pack power and performance in compact and cost-effective 4/8-circuit and 16/24-circuit models. EZ-MAX Plus is the ideal solution for smaller, stand-alone applications that do not require the field configuration or advanced networking features.

Programming is easy with the EZ-MAX Plus with a large LCD screen on the panel or an off-line editor. EZ-MAX Plus includes standard programming configurations for occupancy sensors and photocells as well as a built-in astronomical time clock (ATC) with 101 major city and states programmed into the system.
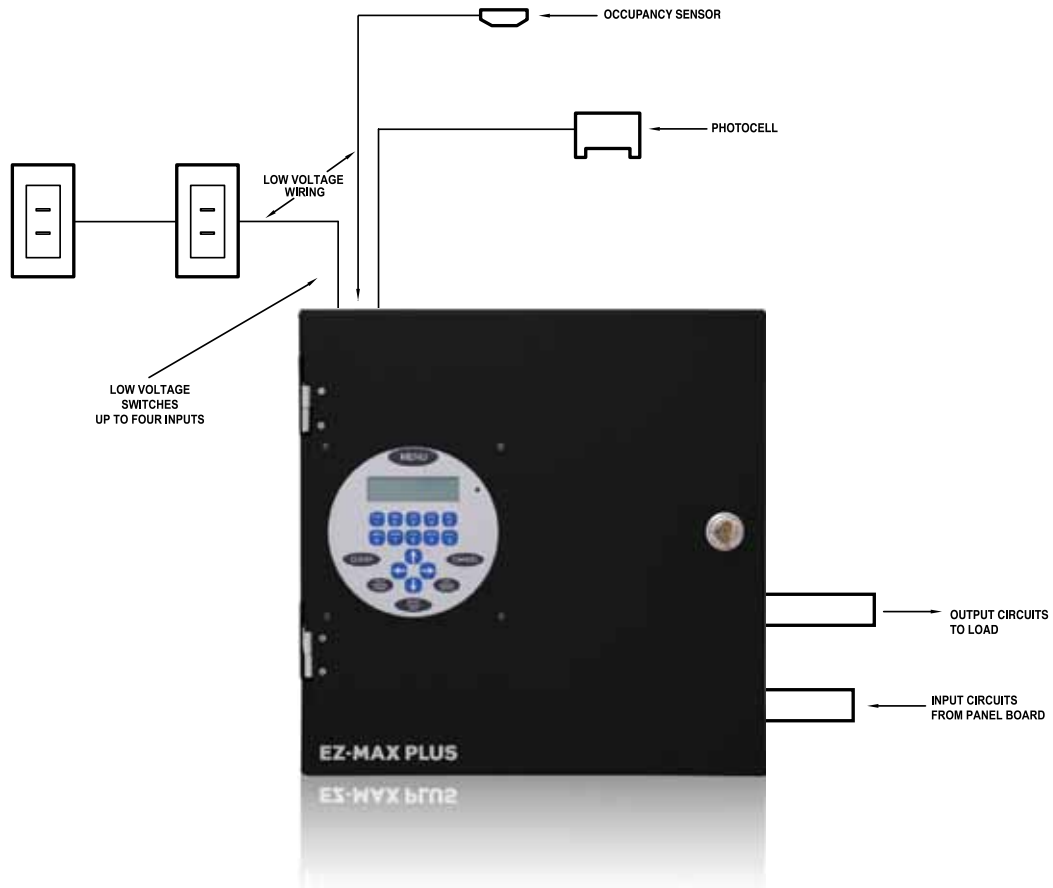
FEATURES

- Combines clock, cabinet, terminal blocks and contactors in a single integrated solution to reduce labor and material costs
- Easy programming using an offline editor or wizard-driven LCD display and oversized buttons
- Easy standard programming configuration:
    - **Occupancy sensors**: manual-ON or auto-ON applications
    - **Photocells**: interior or exterior application modes
    - **Photocell light level trip points:** ON or OFF
- Built-in astronomical time clock and scheduler
    - 101 major cities and states programmed for easy astronomical setup
    - Sunrise/sunset time clock events
- Auto detection/auto assign of installed network switches
- Enable/disable of low voltage and digital input devices minimizes power consumption
- Optional modem configuration for remote touch-tone control
- Clearly labeled access points allow installer to locate optimum knock-out locations
- UL and cUL Listed Industrial Control Equipment and Emergency Lighting Equipment for 120V, 277V and 347V Panels
- ASHRAE 90.1 compliant for 120V, 277V and 347V Panels
- CEC Title 24 compliant for 120V, 277V and 347 Panels
- Rated for 100% load capacity
- 10 year warranty on Relays, 2 year warranty on Panels

APPLICATIONS

- Low voltage control
- Site lighting
- Daylight harvesting
- Occupancy sensor integration
- Parking garage/parking lot lighting
- Smart replacement of time clock/contactor installations
- Any application requiring reliable and cost-effective automatic lighting control

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
R08BD-000	EZ-MAX Plus 8 Panel, 120V, 277V, and 347V, No Relays
R08BD-L04	EZ-MAX Plus 8 Panel, 120V, 277V, and 347V, (4) 30A (NO/NC) Relays
R08BD-L08	EZ-MAX Plus 8 Panel, 120V, 277V, and 347V, (8) 2-Pole (NO) Relays
R24BD-000	EZ-MAX Plus 24 Panel, 120V, 277V, and 347V, No Relays
R24BD-L16	EZ-MAX Plus 24 Panel, 120V, 277V, and 347V, (16) 30A (NO/NC) Relays
R24BD-L24	EZ-MAX Plus 24 Panel, 120V, 277V, and 347V, (24) 30A (NO/NC) Relays
R24BD-216	EZ-MAX Plus 16 Panel, 120V, 277V, and 347V, (16) 2-Pole (NO) Relays
R24BD-224	EZ-MAX Plus 24 Panel, 120V, 277V, and 347V, (24) 2-Pole (NO) Relays
R08BF-000	EZ-MAX Plus 8 Panel, 230V, No Relays
R08BF-L08	EZ-MAX Plus 8 Panel, 230V, (8) 30A (NO/NC) Relays
R08BF-208	EZ-MAX Plus 8 Panel, 230V, (8) 2-Pole (NO) Relays
R24BF-000	EZ-MAX Plus 24 Panel, 230V, No Relays

Note: See page 71 for Ordering Information on Low Voltage Switches

EZ-MAX PLUS RELAY CARDS

EZ-MAX Plus Panels use individual Relay Cards for each circuit allowing for the most flexibility in matching the relay type to your specific load requirements. The benefit of a single relay card for a single circuit allows an infinite arrangement of relay types to position in your system and supports individual replacement should the need ever occur.

- For maximum equipment protection, standard 30A relay card has a Short Circuit Current Rating (SCCR) of 20,000A
- Relay cards individually replaceable
- Mechanical attachment to panel of each relay card is with a single screw
- Listed for use with ballasted loads
- From the panel, each relay card can be controlled as follows:
    - Override ON
    - Override OFF
    - Locked Override ON
    - Locked Override OFF
    - Timed ON
    - Timed Override OFF
- 10 year warranty

EZ-MAX PLUS RELAY CARDS

CAT. NO.	DESCRIPTION
RELAY-L30	1-Pole N/O or N/C Relay Card with Manual Override, 30A, 120-277V, 347V, 20A Ballast
RELAY-2PL	2-Pole, N/O Relay Card, 20A, 208-480V
RELAY-347	347V N/O Relay Card, 20A, 347V

ACCESSORIES*

CAT. NO.	DESCRIPTION
RAC00-2SB	Low-Voltage Switch Adapter, reduces required wire count of GE style switch by 1. (installed at the switch itself, cabinet has terminations for ON/OFF/LED/+1/com)
00LVS-xxW**	xx Button, Low Voltage Switch, White
ZMDSW-xxW**	xx Button, Digital Switch, White
PCOUT-000	Outdoor Photocell, 0-10V
PCIND-000	Indoor Photocell, 0-10V
PCATR-000	Atrium Photocell, 0-10V
PCSKY-000	Skylight Photocell, 0-10V

* For a complete range of occupancy sensors for use with EZ-MAX Plus, refer to www.leviton.com/cenergyproducts
** x = 01, 02, 04, 05, 06, 08 or 10 button switch

SECTOR INTELLIGENT DIGITAL LIGHTING CONTROL SYSTEM

The Sector Intelligent Digital Lighting Control System combines occupancy sensing, daylight harvesting and flexible dimming lighting control in one conveniently integrated system to easily save time, money and energy. This topology-free, polarity-free system allows the entire network to be installed using the same wiring for all components and accessories making it one of the easiest lighting control systems to install. All components are on a single bus, with accessories connected to the network, not the ballast. The Sector family of products provides a scalable solution that offers maximum flexibility and coverage in any application – from a single room to a campus of buildings in retrofit or new construction projects.

FEATURES

Sector Intelligent Digital Lighting Control System

• Topology free

• Polarity free – Class 1 or Class 2 Wiring/standard building supported wiring in same conduit as power wiring

• No special terminations or installation requirements

• Personal workspace lighting control from user's personal computer for user comfort

• Easy to commission – ultimate flexibility in design, installation and configuration using a drag and drop GUI interface with Illustrator layout tool

• Easy to design, easy to install and easy to maintain

Ideal Uses:

Hospitals, offices buildings, medical offices, universities, labs, restaurants, government facilities and any other location that could benefit from the cost savings and energy efficiency of a controlled lighting environment.

ADVANTAGES

• Easy to Design – scalable system for small and large applications; devices that connect directly to the network can be installed anywhere in the system

• Easy to Install – topology free, polarity independent, and operates on standard Class 1 or Class 2 wiring throughout the entire systems to reduce installation costs by as much as 35% or more; standard wire is found in every contractor's inventory

• Easy to Commission – configuration and commissioning is completed from the PC application without physically having to go to each device

• Ultimate time-saving design flexibility – easily integrate various lighting control strategies—switching, distributed dimming, scheduling, occupancy sensing, and daylight harvesting – in one system offering future expansion opportunities

• Easy energy code compliance and eligibility for LEED points

• Control and customization from occupant's desktop as well as remote control and administrator software interface

• SectorFlex system controls Sector and non-Sector 0-10V ballasts or LED dimmers by any manufacturer, allowing for flexibility in implementation

SECTORFLEX INTELLIGENT DIGITAL LIGHTING CONTROL SYSTEM

SectorFlex works for either zonal switching or dimming lighting control and gives you the full power of the Sector design with the flexibility and value of the SectorFlex system. SectorFlex offers the most cost effective and energy efficient lighting control solution that works with virtually any 0-10V load and is frequently used to control 0-10V ballasts, like Sector 7, or 0-10V controllable LED fixtures.

SECTOR INTELLIGENT DIMMING FLOURESCENT BALLASTS

- Intelligent dimming offers higher energy savings and flexibility than traditional switching
- Dimming fluorescent ballasts allow 100% to 1% dimming capabilities
- Ballasts have an addressable labeling system for easy programming and personal lighting control

SECTOR RELAY

- Provides switching control for non-dim devices and 0-10V control for synching and sourcing controllable loads
- Used for both switching only loads and dimming loads controllable with a 0-10 control signal
- Provides additional system design options, allowing control of Ballast incandescent, LED, cold cathode or other sources that may attempt a 0-10VDC control input

SECTOR BUS CONTROLLER

- Contains the brain and the power supply for the Sector system in one component
- Controls a maximum of 64 devices on a system with the ability to expand and include a maximum of 250 systems

SECTOR OCCUPANCY SENSORS

- Turns lights ON/OFF based on vacancy or occupancy
- Multi-technology and infrared (PIR) models available
- Self-adjusting settings continually analyze and adjust sensitivity, timer operation and long-term performance, reducing user complaints

SECTOR PHOTOCELL

- Daylight harvesting capabilities offer consistent lighting at desired level for greater visual comfort

SECTOR DIGITAL SWITCH

• User controls desired light level at the push of a button

• 5 button (ON, MAX, BRIGHT, DIM, OFF) and 2 button (ON, OFF) available

SECTOR HANDHELD REMOTE

• User controls desired light level at the push of a button (ON, MAX, BRIGHT, DIM, OFF)

• Controls lighting levels up to 25 feet from anywhere in the room

SECTOR LOW VOLTAGE INTERFACE

• Allows integration of Sector System with non-Sector occupancy sensors and photocells

• Provides for cost and install time savings by utilizing existing site components

SECTORNET SOFTWARE

• Personal Dimming Option (PDO): Individual control for the lights above a user's workspace right from their desktop PC

• Central control: Facility personnel and lighting administrators can re-configure control as needed with Illustrator layout tool

• A computer is only needed to initially configure the system. Afterward, Sector can be ran as an independent system

• Commissioning quickly associates fixtures to Sector devices for easy configuration that can be remotely controlled

• Data acquisition for energy usage monitoring

• Ladderless commissioning – remotely configure and control system components

• 3 levels of load shed allow user to automatically adjust power consumption across the entire system by simply clicking a button

Area 2
2 Button Switch
Photocell
Sector Ballast
Line Voltage

Area 4
Occupancy Sensor
Sector Ballast
Line Voltage

Area 6
Remote
2 Button Switch
Non-Dim Device Signage
Power
Sector Relay
Line Voltage

Area 8
5 Button Switch
Photocell
Occupancy Sensor
Sector Ballast
Line Voltage
SectorNet Wiring Min 18 AWG

Areas 2 - 7

Area 1 (upper left)
Load - 0-10V Dimming Ballasts
Sector Relay
Line Voltage
5 Button Switch
Occupancy Sensor
Sector Ballast
Line Voltage
SectorNet Network

Area 3
5 Button Switch
Occupancy Sensor
Sector Ballast
Line Voltage
SectorNet Network
Dimmer
0-10V Control & Power
Sector Relay
Line Voltage

Area 5
CLASS 1 or 2 WIRING
Occupancy Sensor
Sector Ballast
Line Voltage
SectorNet Network

Area 1 (right)
2 Button Switch
Occupancy Sensor
Photocell
Sector Ballast
Line Voltage
SectorNet Network
*Power Supply Bus Controller
LumaCAN Network
To other Bus Controllers

Max Longest Run - 1000'
SectorNet Network

Terminate each end of the LumaCAN network by pushing blue button

*Power Supply Bus Controller

LumaCAN Network
CLASS 2 WIRING

Wiring may follow any topology; daisy chain, star, home run etc. or "T" at any point in the network. SectorNet Network is also polarity free!

Up to 8 areas per Bus Controller

64 SectorNet devices per Bus Controller

Max distance between Bus Controller & last device on line is 1,000'/304 Meters

Max 32 input devices (Switch, Photocell, or Occupancy Sensor)

Up to 250 devices are supported on each LumaCAN subnet. A Bus Controller counts as (1) device

* Max 256mA per Power Supply

SECTOR 7

Sector 7 Traditional 0-10V Dimming Ballasts bring advantages to any system and dimming application.

ADVANTAGES

• Light level dimming range from 1% to 100% - <1% dimming for no more cost than 10% dimming

• Universal input – Works with both 120/277V and 50/60Hz

• Flexible – Integrates into existing installations with a variety of off-the-shelf fixtures

• Energy and cost savings – Enables energy conservation when combined with dimming, daylight harvesting and demand response controls

INSTALLATION AND OPERATION BENEFITS

• Minimal installation time – color coded easy-insert connectors simplify wiring and minimize installation time

• Mis-wire protection – Protects lamp failure if wired incorrectly

• Smooth fade – Through dimming rande of 1% to 100% for flicker-free dimming

• Lamps turn on at any dimmed level without flashing to full brightness, this extends lamp life and provides better user experience

• Non-volatile memory – restores all ballast settings after power failure

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
SBP00-00M	Sector Bus Controller/Power Supply, 120-277V, 50/60Hz
SBCS0-L00	Sector Relay, 120-347V 20A Output, 120-277V, 50-60Hz Input
SEN04-000	Sector 4-Module Enclosure (to hold a maximum of 4 Bus Controllers)
OSC04-ISW	Sector PIR Occupancy Sensor, White, 450SF
OSC20-MSW	Sector Multi-Technology Occupancy Sensor, White, 2000SF
ODC0P-0SW	Sector Photocell
SDS00-15W	5-Button Digital Switch, White
SDS00-12W	2-Button Digital Switch, White
SHH00-000	Sector Handheld Infrared Remote Controller
SLM00-000	USB-to-LumaCAN Adapter
SIF00-000	SectorNET Administrative Software
SIFPD-000	SectorNET Client Software
SLIQD-000	SectorNET Low Voltage Interface Module for Occupancy Sensors and Photocells
SLIQS-000	SectorNET Low Voltage Interface Module for Switches, 5-Channel

Sector Ballasts

S D ☐ ☐ 8 - ☐ ☐ M

 # OF LAMPS:
1 or 2

CAN SIZE
F = 9.5" can
J = 16.5" can

WATTAGE
17 = 17 watts
25 = 25 watts
32 = 32 watts

Sector Ballasts

S D ☐ J 5 - ☐ ☐ M

 # OF LAMPS:
1 or 2

WATTAGE
14 = 14 watts
21 = 21 watts
28 = 28 watts
35 = 35 watts

Sector Ballasts

S D 1 J 5 - ☐ ☐ M

WATTAGE
24 = 24 watts
39 = 39 watts
54 = 54 watts

Sector 7 Ballasts

S A ☐ ☐ 8 - ☐ ☐ M

 # OF LAMPS:
1 or 2

CAN SIZE
F = 9.5" can
J = 16.5" can
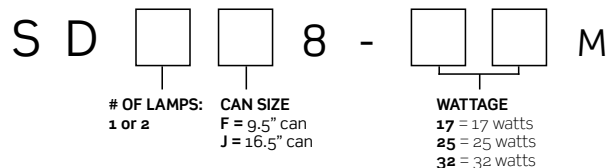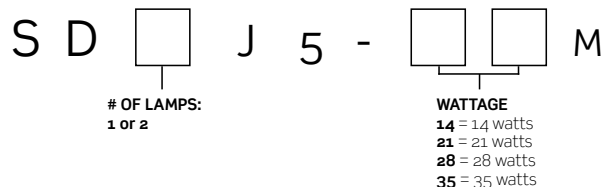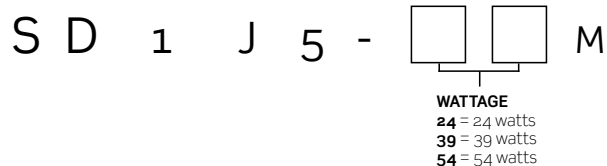
WATTAGE
17 = 17 watts
25 = 25 watts
32 = 32 watts
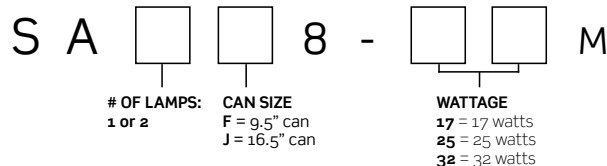
SMARTer Metering. SMARTer Control. REAL Savings. Our revenue-grade submetering products meet all measurement and verification-based opportunities, including smart metering, load management and LEED rating achievement.

A SOLUTION TO RISING ENERGY COSTS

Knowing exactly when and where energy is being used is a valuable tool that will help you better manage and conserve energy, thus saving money. The process is simple and effective – if power is flowing through a circuit, Leviton can measure it. The submeter is installed on the facility side of the master meter and captures accurate measurements of power consumption. Leviton submeters are easy to specify and install for new construction or retrofit projects.

THE BENEFITS OF SUBMETERING

Leviton submeters determine exactly when and where energy is being used; information that can be both a powerful motivator and a significant money-saver. Studies have proven that once tenants became accountable for their energy consumption, it was significantly reduced. This accountability can result in long-term cost savings from 15 to 20 percent.

Leviton submeters deliver accurate information for:

- Load profiling and benchmarking

- Tenant cost allocation

- Measurement and verification (M & V)

- Energy conservation and cost reduction

- Green building initiatives and Government mandates

- AMR/BAS/BMS/EMS integration

- Power Quality Analysis

- Usage aggregation

SIMPLE INSTALLATION

Leviton submeters require no setup or programming. Simply pass the conductors to be measured through the current transformers (CTs) and connect the meter to the power.
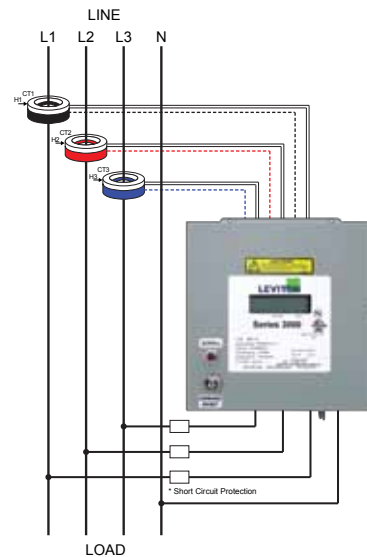
THE MOST OPTIONS, THE MOST PERFORMANCE

Leviton submeters quantify electrical energy consumption for virtually any commercial, industrial or residential application. Engineered to provide the best performance in the submetering industry – accuracy, communication, installation and support – Leviton sets the standard. Sold as individual meters and kits with both solid core and split core Current Transformers (CTs), Leviton Metering Solutions include superior product features standard.

- ANSI accurate current transformers (CTs) deliver superior revenue-grade accuracy for high quality, long-term reliability

- Built in communication features allow for future automation without an additional investment

    - All meters are equipped standard with an isolated pulse output channel for easy AMR/BAS/BMS/EMS system interface

    - All Series 1000, 2000 and 3000 meters feature native Modbus RTU standard

    - Series 3000 Smart Meters conveniently display the date and time for maximum demand

- Installer friendly, reverse phase LED and power and load indicators provide installation diagnostics by visually confirming that the product is properly installed and functioning

- UL 916 Listed for Energy Monitoring Equipment, Leviton Series 1000 and 2000 meters are available in an indoor steel or outdoor NEMA 4X enclosure at the same low price

- Offering includes automated data collection solutions and energy reporting and analysis software to easily and intelligently manage energy consumption

- Open architecture design provides easy integration with third party AMR/BAS/BMS/EMS platforms

- Confidently backed by the best warranty in the industry at 10 years

SERIES 1000 SINGLE PHASE METERS

- Measures kWh with optional Demand functionality (includes Reset Key)

- Conforms to all applicable standards of ANSI C12.1

- Equipped with both Isolated Pulse Output and RS-485 Serial Port (Modbus Native) standard for easy interface with most AMR/BAS/BMS/EMS systems

- Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards

- Up to three sets of CTs per phase can be paralleled per meter

- Ten year warranty

- 1- or 2-Phase applications, 120V, 120/240V, 277V or 277/480V

* 100A-800A Services

Indoor Series 1000
Single Phase Meters

Outdoor Series 1000
Single Phase Meters

SERIES 1000 SINGLE PHASE METER KITS

Note: Kits include meter, specified enclosure and required current transformers

INDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120V 1PH 2W	100	1 Split CT	1K120-01W
	200	1 Split CT	1K120-02W
	400	1 Split CT	1K120-04W
	800	1 Split CT	1K120-08W
	100	1 SOLID CT	1K120-1SW
	200	1 SOLID CT	1K120-2SW
120/208V 1PH 3W or 120/240V 1PH 3W (Split Phase)	100	2 Split CTs	1K240-01W
	200	2 Split CTs	1K240-02W
	400	2 Split CTs	1K240-04W
	800	2 Split CTs	1K240-08W
	100	2 SOLID CTs	1K240-1SW
	200	2 SOLID CTs	1K240-2SW
277V 1PH 2W	100	1 Split CT	1K277-01W
	200	1 Split CT	1K277-02W
	400	1 Split CT	1K277-04W
	800	1 Split CT	1K277-08W
	100	1 SOLID CT	1K277-1SW
	200	1 SOLID CT	1K277-2SW

OUTDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120V 1PH 2W	100	1 Split CT	1O120-01W
	200	1 Split CT	1O120-02W
	400	1 Split CT	1O120-04W
	800	1 Split CT	1O120-08W
120/208V 1PH 3W or 120/240V 1PH 3W (Split Phase)	100	2 Split CTs	1O240-01W
	200	2 Split CTs	1O240-02W
	400	2 Split CTs	1O240-04W
	800	2 Split CTs	1O240-08W
277V 1PH 2W	100	1 Split CT	1O277-01W
	200	1 Split CT	1O277-02W
	400	1 Split CT	1O277-04W
	800	1 Split CT	1O277-08W

SERIES 2000 THREE PHASE METERS

- Measures kWh with optional Demand functionality (includes Reset Key)

- Conforms to all applicable standards of ANSI C12.1

- Equipped with both Isolated Pulse Output and RS-485 Serial Port (Modbus Native) standard for easy interface with most AMR/BAS/BMS/EMS systems

- Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards

- Up to three sets of CTs per phase can be paralleled per meter

- 3-Phase, 4-Wire applications, 120/208V or 277/480V

- 100A-1200A Services

Indoor Series 2000
Three Phase Meters

Outdoor Series 2000
Three Phase Meters

SERIES 2000 THREE PHASE METER KITS

Note: Kits include meter, specified enclosure and required current transformers

INDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3PH 4W WYE kWh Meter	100	3 Split CTs	2K208-01W
	200	3 Split CTs	2K208-02W
	400	3 Split CTs	2K208-04W
	800	3 Split CTs	2K208-08W
	1200	3 Split CTs	2K208-12W
	100	3 SOLID CTs	2K208-1SW
	200	3 SOLID CTs	2K208-2SW
277/480V 3PH 4W WYE kWh Meter	100	3 Split CTs	2K480-01W
	200	3 Split CTs	2K480-02W
	400	3 Split CTs	2K480-04W
	800	3 Split CTs	2K480-08W
	1200	3 Split CTs	2K480-12W
	100	3 SOLID CTs	2K480-1SW
	200	3 SOLID CTs	2K480-2SW
120/208V 3PH 4W WYE Demand Meter	100	3 Split CTs	2K208-01D
	200	3 Split CTs	2K208-02D
	400	3 Split CTs	2K208-04D
	800	3 Split CTs	2K208-08D
	1200	3 Split CTs	2K208-12D
277/480V 3PH 4W WYE Demand Meter	100	3 Split CTs	2K480-01D
	200	3 Split CTs	2K480-02D
	400	3 Split CTs	2K480-04D
	800	3 Split CTs	2K480-08D
	1200	3 Split CTs	2K480-12D

OUTDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3PH 4W WYE kWh Meter	100	3 Split CTs	2O208-01W
	200	3 Split CTs	2O208-02W
	400	3 Split CTs	2O208-04W
	800	3 Split CTs	2O208-08W
	1200	3 Split CTs	2O208-12W
277/480V 3PH 4W WYE kWh Meter	100	3 Split CTs	2O480-01W
	200	3 Split CTs	2O480-02W
	400	3 Split CTs	2O480-04W
	800	3 Split CTs	2O480-08W
	1200	3 Split CTs	2O480-12W

SERIES 3000 ADVANCED KWH METERS

- kWh meter with standard Demand functionality (includes Reset Key)
- 120/208V, 277/480V, 347/600V 3PH 4W WYE; 208V, 240V 480V 3PH 3W DELTA
- 100-5000 Amps
- Advanced data meter
- Volt, amps, watts, PF and VA per phase
- Modbus RTU (RS485) and Pulse output - standard features
- Certified to all applicable standards of ANSI C12.1
- Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards
- Up to three sets of CTs per phase can be paralleled per meter

Indoor Series 3000
Advanced kWh Meters

Outdoor Series 3000
Advanced kWh Meters

SERIES 3000 ADVANCED KWH/DEMAND METER KITS

Note: Kits include meter, specified enclosure and required current transformers

INDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3PH 4W WYE Demand Meter	100	3 Split CTs	3K208-01D
	200	3 Split CTs	3K208-02D
	400	3 Split CTs	3K208-04D
	800	3 Split CTs	3K208-08D
	1600	3 Split CTs	3K208-16D
	3000	3 Split CTs 3	K208-30D
	5000	3 Split CTs	3K208-50D
	100	3 SOLID CTs	3K208-1SD
	200	3 SOLID CTs 3	K208-2SD
277/480V 3PH 4W WYE Demand Meter	100	3 Split CTs	3K480-01D
	200	3 Split CTs	3K480-02D
	400	3 Split CTs	3K480-04D
	800	3 Split CTs	3K480-08D
	1600	3 Split CTs	3K480-16D
	3000	3 Split CTs	3K480-30D
	5000	3 Split CTs	3K480-50D
	100	3 SOLID CTs	3K480-1SD
	200	3 SOLID CTs	3K480-2SD
347/600V 3PH 4W WYE Demand Meter	100	3 Split CTs	3K600-01D
	200	3 Split CTs	3K600-02D
	400	3 Split CTs	3K600-04D
	800	3 Split CTs	3K600-08D
	1600	3 Split CTs	3K600-16D
	3000	3 Split CTs	3K600-30D
	5000	3 Split CTs	3K600-50D
	100	3 SOLID CTs	3K600-1SD
	200	3 SOLID CTs	3K600-2SD
208 or 240V 3PH 3W DELTA Demand Meter	100	3 Split CTs	3K24D-01D
	200	3 Split CTs	3K24D-02D
	400	3 Split CTs	3K24D-04D
	800	3 Split CTs	3K24D-08D
	1600	3 Split CTs	3K24D-16D
	3000	3 Split CTs	3K24D-30D
	5000	3 Split CTs	3K24D-50D
480V 3PH 3W DELTA Demand Meter	100	3 Split CTs	3K48D-01D
	200	3 Split CTs	3K48D-02D
	400	3 Split CTs	3K48D-04D
	800	3 Split CTs	3K48D-08D
	1600	3 Split CTs	3K48D-16D
	3000	3 Split CTs	3K48D-30D
	5000	3 Split CTs	3K48D-50D

OUTDOOR ENCLOSURE

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3PH 4W WYE Demand Meter	100	3 Split CTs	3O208-01D
	200	3 Split CTs	3O208-02D
	400	3 Split CTs	3O208-04D
	800	3 Split CTs	3O208-08D
	1600	3 Split CTs	3O208-16D
	3000	3 Split CTs	3O208-30D
	5000	3 Split CTs	3O208-50D
277/480V 3PH 4W WYE Demand Meter	100	3 Split CTs	3O480-01D
	200	3 Split CTs	3O480-02D
	400	3 Split CTs	3O480-04D
	800	3 Split CTs	3O480-08D
	1600	3 Split CTs	3O480-16W
	3000	3 Split CTs	3O480-30D
	5000	3 Split CTs	3O480-50D
347/600V 3PH 4W WYE Demand Meter	100	3 Split CTs	3O600-01D
	200	3 Split CTs	3O600-02D
	400	3 Split CTs	3O600-04D
	800	3 Split CTs	3O600-08D
	1600	3 Split CTs	3O600-16D
	3000	3 Split CTs	3O600-30D
	5000	3 Split CTs	3O600-50D
208 or 240V 3PH 4W DELTA Demand Meter	100	3 Split CTs	3O24D-01D
	200	3 Split CTs	3O24D-02D
	400	3 Split CTs	3O24D-04D
	800	3 Split CTs	3O24D-08D
	1600	3 Split CTs	3O24D-16D
	3000	3 Split CTs	3O24D-30D
	5000	3 Split CTs	3O24D-50D
480V 3PH 3W DELTA Demand Meter	100	3 Split CTs	3O48D-01D
	200	3 Split CTs	3O48D-02D
	400	3 Split CTs	3O48D-04D
	800	3 Split CTs	3O48D-08D
	1600	3 Split CTs	3O48D-16D
	3000	3 Split CTs	3O48D-30D
	5000	3 Split CTs	3O48D-50D

MINI METER™

Equitable Tenant Billing

To be truly equitable, tenants should pay only for what they actually use. Leviton Mini Meter submeters enable building managers to allocate energy usage costs fairly to multiple tenants, as well as recoup energy expenses from common-use areas (parking lots, hall lighting, etc.). Tenants benefit by paying only for the energy they use; and when they focus on conserving energy, they can see direct financial benefits from their efforts.

• Measures kWh

• Certified to all applicable standards of ANSI C12.1

• Equipped with an isolated pulse output for automated meter reading

• Available in indoor flush mount enclosure

• Available in NEMA 4X indoor/outdoor individual meter enclosures and Multiple Meter Units (MMUs) from 2 to 19 meters

• Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards

• CTs feature a 0.1A secondary current, allowing up to three sets of CTs per phase to be installed in parallel per meter

• Components of Mini Meter Kits are UL Listed: "6" models UL/cUL Listed Energy Usage Monitor per CCN FTRZ; "7" models UL/cUL Recognized Energy Usage Monitoring Equipment

• 1-Phase, 2-Wire applications, 120V and 1-Phase, 3-Wire applications, 120/208/240V

• 100A-200A Services

MINI METER KITS

Indoor Enclosure

NOTE: All kits include meter, specified enclosure and Current Transformers (CTs)

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3W or 120/240V 1PH 3W (Split Phase)	100A	2 SOLID CTs	MK240-1SW
	200A	2 SOLID CTs	MK240-2SW

Outdoor Enclosure

VOLTAGE	AMPS	CTS INCLUDED	CAT. NO.
120/208V 3W or 120/240V 1PH 3W (Split Phase)	100A	2 SOLID CTs	MO240-1SW
	200A	2 SOLID CTs	MO240-2SW
120/208V 2PH 3W or 120/240V 1PH 3W (Split Phase)	100A	2 Split CTs	MO240-01W
	200A	2 Split CTs	MO240-02W

Indoor Flush Mount Mini Meter

Outdoor Mini Meter

CURRENT TRANSFORMERS

Leviton meters utilize highly accurate current transformers for revenue-grade performance certified to ANSI standards. Competing products use current sensors that do not provide the same level of performance. Leviton offers CTs in solid and split core styles to accommodate all phases of installation and construction. Both solid and split core CTs have built-in voltage suppressors that prevent hazardous voltages from developing should the CT wires become disconnected from the meter while under load. All CTs offer high quality, long term accuracy and reliability.

Split Core
Current Transformers

Solid Core
Current Transformers

ORDERING INFORMATION

NOTE: Meters sold separately.

AMP	CAT. NO.	DESCRIPTION
SINGLES		
SOLID CORE		
100:0.1A	CDE01-K11	Solid Core, 0.67", Black
100:0.1A	CDE01-L11	Solid Core, 0.67", Blue
100:0.1A	CDE01-R11	Solid Core, 0.67", Red
200:0.1A	CDA02-L12	Solid Core, 0.72", Blue
200:0.1A	CDE02-R11	Solid Core, 0.67", Red
200:0.1A	CDA02-R12	Solid Core, 0.72", Red
200:0.1A	CDE02-K11	Solid Core, 0.67", Black
200:0.1A	CDE02-K12	Solid Core, 0.72", Black
200:0.1A	CDE02-L11	Solid Core, 0.67", Blue
SPLIT CORE		
100:0.1A	CTD01-K16	Split Core, .75" x .75"
200:0.1A	CTD02-K16	Split Core, 1" x 1"
400:0.1A	CDF04-K24	Split Core, 1.5"
400:0.1A	CTD04-K23	Split Core, 1.4" x 1.4"
800:0.1A	CTC08-K46	Split Core, 3" x 3.5"
1200:0.1A	CTC12-K46	Split Core, 4" x 6"
1600:0.1A	CTC16-K96	Split Core, 4" x 6"
3000:0.1A	CTC30-57B*	Split Core, 5" x 7"
5000:0.1A	CTC50-57B*	Split Core, 5" x 7"
AMP	**CAT. NO.**	**DESCRIPTION**
KITS		
100:0.1A	CDE01-211	CT Kit, 0.67", Red, Black
100:0.1A	CDE01-311	CT Kit, 0.67", Blue, Red, Black
200:0.1A	CDE02-211	CT Kit, 0.67", Red, Black
200:0.1A	CDE02-311	CT Kit, 0.67", Blue, Red, Black
200:0.1A	CDA02-212	CT Kit, 0.72", Red, Black
200:0.1A	CDA02-312	CT Kit, 0.72", Blue, Red, Black

*Consult factory for availability
Leviton recommends solid core transformers (CTs) for revenue-grade accuracy. Our 100A and 200A color coded CTs assist with correct installation by indicating phase monitored. Split core CTs are also available upon request for applications where power cannot be interrupted during installation.

MULTIPLE METER UNITS (MMUS)

Leviton's Multiple Meter Units (MMUs) are ideal for multi-family residential applications—allowing building managers to monitor and bill each tenant based on actual energy use. Tenants are accountable only for the energy they use, and have more motivation to conserve energy to save money. Building managers are able to easily track the energy use in common areas (parking lots, hall lighting, etc.) to recover these previously hard-to-allocate costs, and divide them fairly among tenants.

For both retrofit and new construction, Leviton MMUs are fast and easy to install. They come pre-wired per project panel schedules with clearly labeled connections, minimizing the electrical installation time, another great money saving feature.

Extra Large Mini Meter
Multiple Meter Unit
(MMU)

Large Mini Meter
Multiple Meter Unit
(MMU)

All Leviton MMUs are UL Listed assemblies, giving your customers extra assurance for no extra cost. Choose from an indoor steel model in 4/8/16 unit single- or three-phase configurations or a weatherproof outdoor enclosure in 4/8/19 single-phase meter configurations for about the same price (Outdoor enclosure option for Mini Meter MMUs only). If your application requires a different configuration, Leviton is ready to help.

ORDERING INFORMATION

Mini Meter MMUs

VOLTAGE	DESCRIPTION	CAT. NO.
MEDIUM MINI METER MMU, 2-4 METERS		
120/240V 1PH 3W	2 Dual Element Meters	6M202-CFG
	3 Dual Element Meters	6M203-CFG
	4 Dual Element Meters	6M204-CFG
120/208V 3PH 4W	2 Dual Element Meters	6M302-CFG
	3 Dual Element Meters	6M303-CFG
	4 Dual Element Meters	6M304-CFG
LARGE MINI METER MMU, 5-8 METERS		
120/240V 1PH 3W	5 Dual Element Meters	6L205-CFG
	6 Dual Element Meters	6L206-CFG
	7 Dual Element Meters	6L207-CFG
	8 Dual Element Meters	6L208-CFG
120/208V 3PH 4W	5 Dual Element Meters	6L305-CFG
	6 Dual Element Meters	6L306-CFG
	7 Dual Element Meters	6L307-CFG
	8 Dual Element Meters	6L308-CFG
EXTRA-LARGE MINI METER MMU, 9-19 METERS, NEMA 4X ENCLOSURE		
120/240V 1PH 3W	9 Dual Element Meters	6X209-CFG
	10 Dual Element Meters	6X210-CFG
	11 Dual Element Meters	6X211-CFG
	12 Dual Element Meters	6X212-CFG
	13 Dual Element Meters	6X213-CFG
	14 Dual Element Meters	6X214-CFG
	15 Dual Element Meters	6X215-CFG
	16 Dual Element Meters	6X216-CFG
	17 Dual Element Meters	6X217-CFG
	18 Dual Element Meters	6X218-CFG
	19 Dual Element Meters	6X219-CFG
120/208V 3PH 4W	9 Dual Element Meters	6X309-CFG
	10 Dual Element Meters	6X310-CFG
	11 Dual Element Meters	6X311-CFG
	12 Dual Element Meters	6X312-CFG
	13 Dual Element Meters	6X313-CFG
	14 Dual Element Meters	6X314-CFG
	15 Dual Element Meters	6X315-CFG
	16 Dual Element Meters	6X316-CFG
	17 Dual Element Meters	6X317-CFG
	18 Dual Element Meters	6X318-CFG
	19 Dual Element Meters	6X319-CFG

SERIES 2000 MMUs

VOLTAGE	DESCRIPTION	CAT. NO.
MEDIUM SERIES 2000 MMU, 2-4 METERS		
120/208V 3PH 4W	2 Three Element Meters	2M202-CFG
	3 Three Element Meters	2M203-CFG
	4 Three Element Meters	2M204-CFG
277/480V 3PH 4W	2 Three Element Meters	2M402-CFG
	3 Three Element Meters	2M403-CFG
	4 Three Element Meters	2M404-CFG
LARGE SERIES 2000 MMU, 5-8 METERS		
120/208V 3PH 4W	5 Three Element Meters	2L205-CFG
	6 Three Element Meters	2L206-CFG
	7 Three Element Meters	2L207-CFG
	8 Three Element Meters	2L208-CFG
277/480V 3PH 4W	5 Three Element Meters	2L405-CFG
	6 Three Element Meters	2L406-CFG
	7 Three Element Meters	2L407-CFG
	8 Three Element Meters	2L408-CFG
EXTRA-LARGE SERIES 2000 MMU, 9-16 METERS		
120/208V 3PH 4W	9 Three Element Meters	2X209-CFG
	10 Three Element Meters	2X210-CFG
	11 Three Element Meters	2X211-CFG
	12 Three Element Meters	2X212-CFG
	13 Three Element Meters	2X213-CFG
	14 Three Element Meters	2X214-CFG
	15 Three Element Meters	2X215-CFG
	16 Three Element Meters	2X216-CFG
277/480V 3PH 4W	9 Three Element Meters	2X409-CFG
	10 Three Element Meters	2X410-CFG
	11 Three Element Meters	2X411-CFG
	12 Three Element Meters	2X412-CFG
	13 Three Element Meters	2X413-CFG
	14 Three Element Meters	2X414-CFG
	15 Three Element Meters	2X415-CFG
	16 Three Element Meters	2X416-CFG

LEVITON METERING SOLUTIONS SYSTEM ARCHITECTURE

Leviton/ 3rd Party Meters	Meter Network	Data Collection	External Communication	Stakeholders

Electric

Water

Gas

Steam

ModBus RS485 Serial Network

ModBus TCP

Pulse, Analog

LAN

CLOUD

Wide Area Network

Data Pushed HTTP & FTP .CSV/XML

ONSITE

On-Site PC/ Server

Building Management System

OFFSITE

Leviton Energy Manager

Third Party Billing

Energy Services Provider

LAN equipment available from others.

METERING COMMUNICATIONS SYSTEMS

To create a data network between Leviton submeters and stakeholders (BAS, third party billing, Leviton Energy Manager software, etc.), Leviton offers Metering Communication Systems. These solutions transmit data from meters to end systems, creating a seamless transition between data collection and data display. Leviton Metering Communications Systems also enable facilities to create metering systems that can easily share data through open protocols such as Modbus, and IP-based data transfer through HTTP/FTP of .csv or XML files. The results are robust and reliable networks scalable to accommodate future expansion, with data made accessible from any internal or external location.

METERING COMMUNICATION HUBS

Metering Communication Hubs, including the Energy Monitoring Hub (EMH), EMB and EMBLite, are intelligent, flexible data acquisition servers allowing users to collect energy data from meters and environmental sensors. Designed to connect to IP-based applications such as enterprise energy management, demand response and smart grid programs, Hub servers let you connect thousands of energy points, benchmark energy usage and reduce energy costs.

- Collects and logs data from connected wired or wireless devices based on user-set intervals
- Pushes or pulls data via HTTP, XML, FTP or any custom protocol using an Ethernet (LAN) connection
- No software required: Information can be accessed through any web browser in any location
- Plug and play connectivity
- Compatible with nearly any front-end software platform allowing customers to use a variety of reporting tools
- Push or pull meter data to energy dashboards, kiosks and software applications
- Monitor performance of critical systems (lighting, HVAC, PDUs, inverters, etc.)

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
A8812-001	Energy Monitoring Hub – Configured for Leviton Energy Manager
A8812-000	Energy Monitoring Hub – Non-Configured
A8810-000	EMB Hub
A7810-000	EMB HubLite
YBM05-010	Power Supply for EMB Hub and EMB HubLite

EMB HubLite

Energy Monitoring Hub

MODHOPPER

The ModHopper is a breakthrough mesh technology design that makes connecting Modbus RTU (RS485) and pulse devices simple and cost effective. Our "smart" ModHopper transceivers eliminate the need for costly wiring runs allowing users to capture meter data in the most challenging retrofit and campus environments. Collect meter points in existing buildings with minimum down-time or disruption of day-to-day operations.

- Designed specifically for wireless metering and Leviton Metering Solutions for guaranteed compatibility
- No software or programming required and devices automatically configure when powered, reducing labor costs and installation time
- Wireless "mesh" network—self-healing, self-optimizing for ease of installation and maintenance
- Connect up to 32 Modbus and 2 pulse devices per ModHopper for the ultimate expandable solution
- Long distance communication (3000ft indoor/14 miles LOS) for flexibility of placement and easier future expansion
- Multiple independent network capability
- Reliable, constant two-way communication and packet verification
- Point to multi-point communication
- Field upgradable firmware for user-friendly future upgrades and expansion

ModHopper

HIGH DENSITY PULSE MODULE

The High Density Pulse Module provides a convenient way to expand a Leviton Metering System by connecting the HD Pulse Module to an Energy Monitoring Hub (EMH) and/or ModHopper for system expansion. The HD Pulse Module accepts up to 23 standard pulse sensors and can function as a slave device with any Modbus master. This data can easily be integrated to a network of other critical energy sensors to provide a comprehensive energy monitoring solution. The HD Pulse Module is ideal for applications with a high density of pulse output devices, giving users access to meters that would previously require multiple modules.

- External communications handled via shielded twisted pair 18-22 gauge wire allowing communication up to 4000 feet and pulse input communications up to 200 feet (consult factory for longer runs) using 18-24 gauge control wire

- DIN or wall mounting make installations quick and easy

- Device verification - LED indicators for each pulse input allow for fast indication and verification of pulses to reduce installation and troubleshooting time

- Non-volatile memory retains configuration and pulse count totals during power failures for reliable data collection and retention

- Easily add pulse meters to Modbus network for a scalable, open protocol solution

- Field upgradable firmware for user-friendly future upgrades and expansion

High Density Pulse Module

FLEX I/O MODULE

The Flex I/O Module is a cost-effective way to collect data from meters or sensors and bring the information into a Modbus network or energy monitoring system. As a stand-alone or bundled package, the Leviton Flex I/O can be incorporated with data acquisition and metering devices to provide a cost-effective energy monitoring solution. The Flex I/O is compatible with virtually any Modbus master, allowing customers the flexibility to use it in existing Modbus networks. Use with the Leviton Energy Monitoring Hub (EMH).

- Easily add meters and sensor to Modbus network

- 8x user selectable inputs

- 2x output relays

- 2x pulse replicator

- Non-volatile memory

- Industrial temperature range (-30°C to 70°C)

- LEDs for visual verification/status reduce installation and troubleshooting time

- Din or wall mount for easy installation

- Field upgradable firmware for user-friendly future upgrades and expansion

Flex I/O Module

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
A8911-000	High Density Pulse Module, 23 Inputs
A8332-000	Flex I/O Module, 8 User Selectable Inputs, 2 Relay Outputs
R9120-500	ModHopper and Power Supply

ENERGY MANAGER MONITORING SOFTWARE
Measure. Monitor. Manage. If You Don't Measure It, You Can't Manage It!
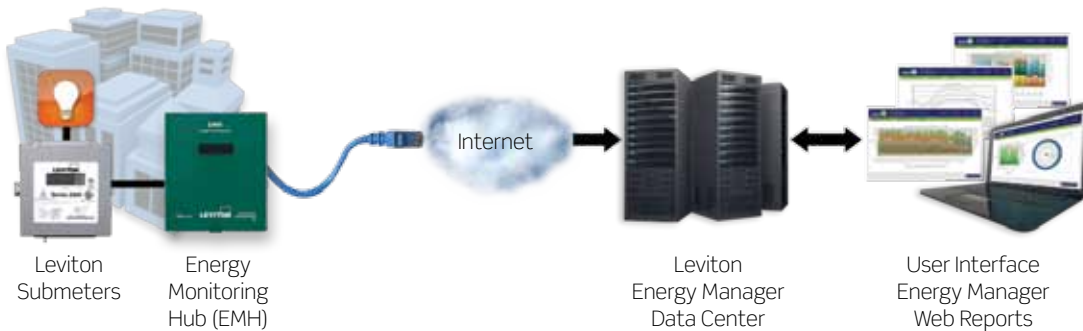Energy monitoring and reporting is the key to measuring and managing energy efficiency and cost.

SAVE ENERGY, REDUCE COSTS, BE SUSTAINABLE
With a competitive global economy, soaring energy prices, increasing environmental issues and technology-based decision making, your profitability depends on the ability to analyze and control operating costs. Better energy management saves money and translates to an improved bottom line.

Decision makers everywhere are turning to Leviton Energy Manager to get the information they need to make smart energy choices. An advanced web based platform that provides real time data for your entire enterprise, Leviton Energy Manager gives you the most sophisticated tools to drive energy efficiencies, reduce operating costs and create more sustainable, environmentally sound facilities.

HOW LEVITON ENERGY MANAGER WORKS
Simple, Effective, Turn Key Solution to Monitor Energy in Real Time

Internet

| Leviton Submeters | Energy Monitoring Hub (EMH) | Leviton Energy Manager Data Center | User Interface Energy Manager Web Reports |

- **Meters** record *real time* consumption data
- **Energy Monitoring Hub (EMH)** receives meter data and pushes it to Energy Manager data center
- **Data Center** stores, manages and reports data in *real time*
- **Energy Manager** software analyzes, formats and reports the data
- **User** logs into Energy Manager website and accesses data and reports

LEVITON ENERGY MANAGER IS PACKED WITH FEATURES

Leviton Energy Manager Package
- Illustrates information in real time
- Load profiling and benchmarking
- Works with existing meters
- Easy to install and use
- Measure & validate
- Scalable to an unlimited number of meters
- Configurable on-site system
- Instant alarm notification system

Energy Monitoring Hub (EMH)
- Easy to install
- Fully expandable for any sized application
- Accepts all meter types
- Compatible with ModBus RTU metering
- Plug & Play - no programming needed
- Collects real time energy data in 15 minute intervals
- Automatically pushes data to Energy Manager data center

Energy Manager Monitoring Software
- Simplified, easy to use with intuitive drilldown functionality
- Instant productivity for all users
- All reports are no more than three clicks away!
    - Real-time Report
    - Daily Report
    - Weekly Report
    - Weekly Profile Report
    - Monthly Report
    - Monthly Profile Report
    - Annual Report
    - Comparison Report
    - Carbon Emissions Report
    - Energy Center Report

ENERGY MANAGER MONITORING SOFTWARE
Detailed Reporting in Just Three Clicks!

Daily Report

Energy Center Report

Annual Report


Carbon Emissions Report

Comparison Report

Multiple Meter Analysis Report

ENERGY MANAGER MONITORING SOFTWARE

CAT. NO.	DESCRIPTION
Year One	
LEMSB-000	Energy Manager Software - Base License Program - includes (8) control points and (1) user account
LEMSP-000	Energy Manager Software - Additional Points License - includes (8) control points
Annual Renewal	
LEMSB-R00	Energy Manager Software - Base License Program Renewal
LEMSP-R00	Energy Manager Software - Additional Points License Renewal
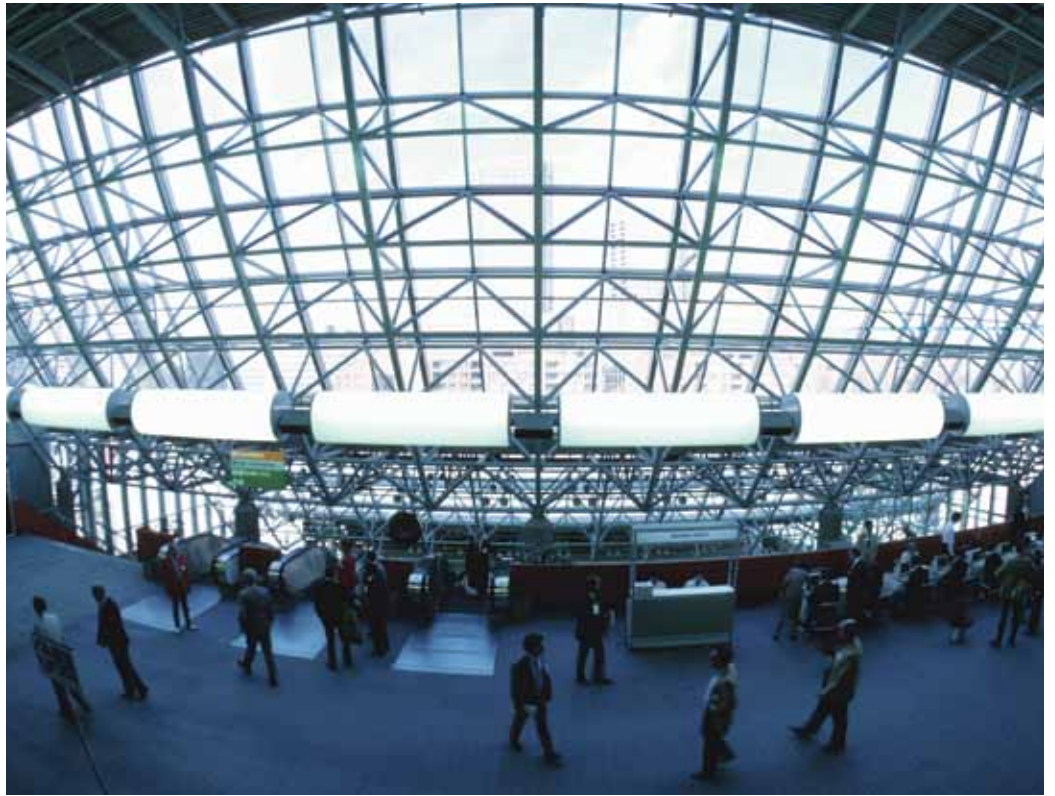
FOR OEM APPLICATIONS

Leviton offers a range of devices for fixture manufacturers designed to help you capitalize on the growing demand for energy efficient lighting. Through intelligent design of innovative products that keep pace with the latest trends in lighting, Leviton OEM products can help you control costs and streamline the assembly process—all while adding value to your products.

ZIPLINE™ FLUORESCENT RETROFIT SOLUTION

Zipline is an industry-first linear fluorescent lighting fixture retrofit solution that dramatically reduces installation time and eliminates wiring errors. This patent-pending Leviton innovation integrates the entire lighting system into two simple to install components, cutting retrofit installation time by up to half. This translates to less downtime for facility managers, and more productivity for contractors. Additionally, Zipline eliminates socket wiring errors by eliminating socket wiring, making it a virtually error-proof system.

Zipline uses a ballast design with over a decade of field proven performance, and is constructed of ultra-duty polycarbonate for industry-leading service life.

THE OLD WAY:

A labor-intensive and time-consuming process:

• Removal, replacement and re-wiring of ballast and ampholders

• Multiple connections, fasteners and wiring

• Potential for installation errors

THE ZIPLINE WAY:

An integrated modular solution:

• Ballast and lampholders are integrated into one unit

• Installs quickly and easily using only two screws per side

FEATURES

• Easy to install

• Fits most 2x2 and 2x4 ceiling troffers

• Available in 2- and 3-lamp configurations

• Snap-in reflectors available

• Available in high, normal and low ballast factors

• 5 year limited warranty

• Integrated ballast with 10 years of proven reliability in service

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
ZIPLINE COMPONENTS	
360RC-002	2-lamp, normal ballast factor system
360RC-012	2-lamp, low ballast factor system
360RC-022	2-lamp, high ballast factor system
360RC-003	3-lamp, normal ballast factor system
360RC-013	3-lamp, low ballast factor system
ZIPLINE REFLECTORS	
REFLT-402	2-Lamp, white, 4ft reflector, 91% reflectivity
REFLT-412	2-lamp, enhanced aluminum, 4ft reflector, 95% reflectivity
REFLT-403	3-lamp, white, 4ft reflector, 91% reflectivity
REFLT-413	3-lamp, enhanced aluminum, 4ft reflector, 95% reflectivity
REFLT-202	2-lamp, white, 2ft reflector, 91% reflectivity
REFLT-212	2-lamp, enhanced aluminum, 2ft reflector, 95% reflectivity
REFLT-203	3-lamp, white, 2ft reflector, 91% reflectivity
REFLT-213	3-lamp, enhanced aluminum, 2ft reflector, 25% reflectivity

FLUORESCENT LAMPHOLDERS

Lamp and ballast technologies have evolved significantly during the last ten years and their improved efficiency ratings have made it attractive for businesses and institutions to replace their old, fluorescent lamps with new, more energy-efficient lamps. With strong demand for T-8 and T-5 linear fluorescent bulbs and fixtures in this highly competitive market, any device that lowers your cost and increases profitability can be important to your business. Leviton's extensive line of fluorescent lampholders includes:

• Miniature bi-pin fluorescent T-5 lampholders
• T-8-to-T-5 lampholder adapter
• 2G11-based fluorescent lampholders
• Dedicated T-8 bi-pin fluorescent lampholders
• A full line of compact fluorescent lampholders

26800

26725-201

26725-202

23652, 23653, 23654

26730, 36735, 26740

RENOIR™ II COMMERCIAL DIMMERS

Packaging Renoir™ II dimmers with your fixtures and selling them as one lets you offer an attractive option to those seeking a complete lighting energy management solution. The Renoir II line includes options for switch, slide and rotary dimmers, and these stylish controls are available in thin and standard heat sink with multiple gangs. With a variety of colors and finishes from which to choose, there's a dimmer to complement just about any fixture.
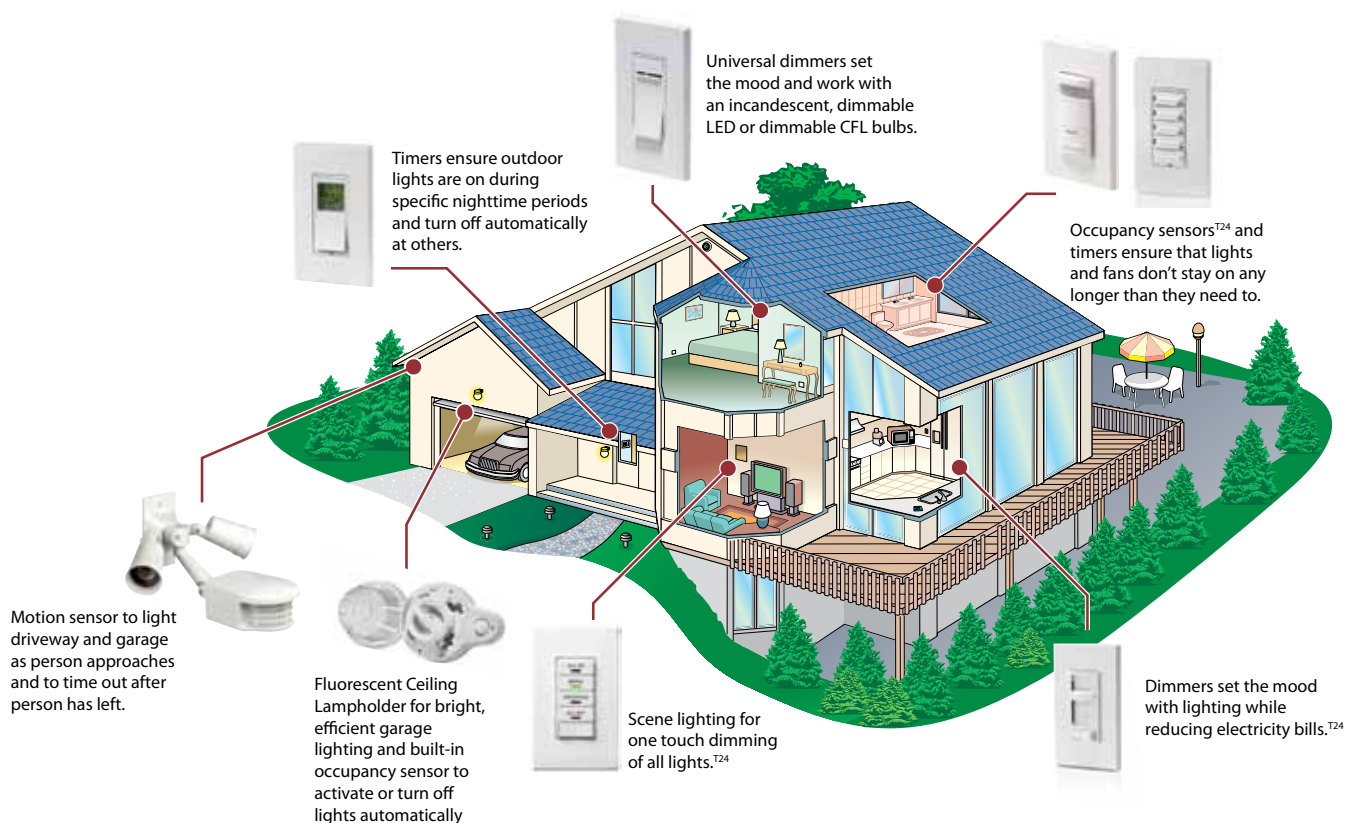
Renoir II Slide
Preset Master
Standard
Heat Sink

Renoir II Rotary
Preset Master

Renoir II Slide
Master Thin
Heat Sink

Renoir II Rotary
Preset Master

Renoir II Remote
Switch Thin
Heat Sink

FOR RESIDENTIAL APPLICATIONS

In addition to the inherent benefits of increased efficiency, such as conserving precious resources and minimizing air pollution, green lighting controls deliver big savings. According to the American Lighting Association, lighting accounts for 25 percent of the average homeowner's electric bill. Between the rising cost of energy and an increased concern for the environment, it's no wonder that home-owners have become eager to incorporate energy-efficient lighting controls and devices in their homes.

Occupancy sensors, motion sensors and timers are not only convenient and safety-enhancing, but they also reduce electricity consumption. And there's one more reason to use lighting controls in new construction: even in the residential arena, energy efficiency codes are increasingly becoming the law of the land. Lighting control devices can make a significant contribution to a home's ability to meet energy efficiency standards including California's Title 24. Although they are not as "green" as their fluorescent counterparts, many homeowners find incandescent lighting much more appealing because of the warm quality of the light itself and because of the wide selection of designer fixtures. Leviton's incandescent lighting controls allow homeowners to save on electricity while enjoying the lighting they really want. As new technologies evolve and become more commonplace, Leviton continues to keep up with the pace. We offer dimmers that control dimmable LED and CFL light sources. Whatever the homeowner's preference, we offer a quality solution.

SINGLE- OR MULTI-FAMILY HOMES OF STYLE

Every day, in homes all across the country, people rely on Leviton's lighting controls to illuminate their way and reduce their electricity bills. Our extensive line of reliable Decora® controls includes residential occupancy sensors, timers and dimmers—and our Vizia +® designer lines provide the ultimate in aesthetics and state-of-the art technology.
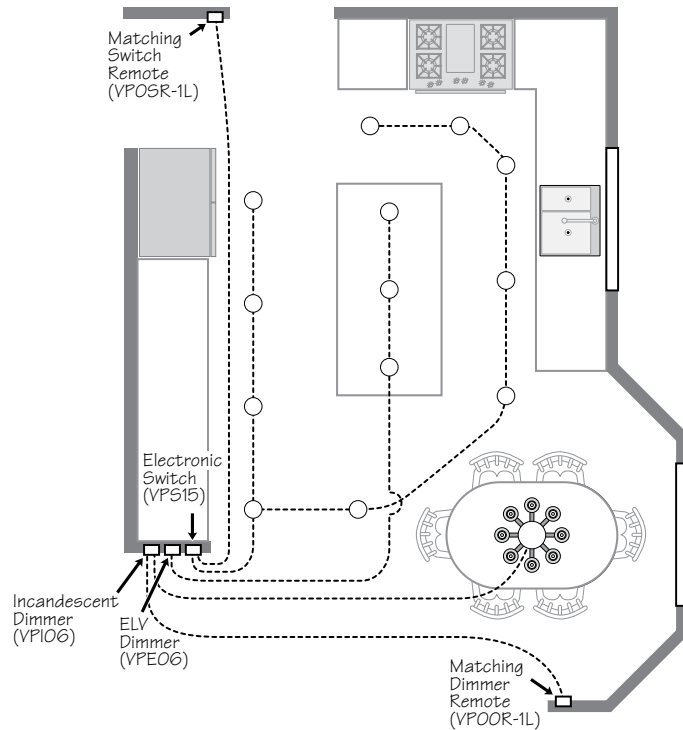

Universal dimmers set the mood and work with an incandescent, dimmable LED or dimmable CFL bulbs.

Timers ensure outdoor lights are on during specific nighttime periods and turn off automatically at others.

Occupancy sensors[T24] and timers ensure that lights and fans don't stay on any longer than they need to.

Motion sensor to light driveway and garage as person approaches and to time out after person has left.

Fluorescent Ceiling Lampholder for bright, efficient garage lighting and built-in occupancy sensor to activate or turn off lights automatically

Scene lighting for one touch dimming of all lights.[T24]

Dimmers set the mood with lighting while reducing electricity bills.[T24]

T24: Complies with California Title 24.

IN THE KITCHEN

Cooking, cleaning, eating and doing homework: there's a lot going on in the typical kitchen. In a large kitchen, there may be several banks of lights for illuminating different areas. To meet standards such as California's Title 24 up to one half of all lights in this room must be fluorescent; the other half may be incandescent or low-voltage fixtures, which may be dimmed to suit the task at hand while minimizing electricity usage. Dimmers give the homeowner the ability to control each bank of lights separately. Matching on/off switches can be installed to control required, high-efficacy lighting.

Matching Switch Remote (VPOSR-1L)

Electronic Switch (VPS15)

Incandescent Dimmer (VP106)

ELV Dimmer (VPE06)

Matching Dimmer Remote (VPOOR-1L)

IN THE BATHROOM

Dimmers, timers and occupancy sensors can all be combined to reduce energy consumption in the bathroom. With a Vizia + dimmer attached to a manual-on occupancy sensor remote, lights can be kept down low except when needed for tasks that require extra light, like shaving and applying makeup. They can turn off by themselves after the room is vacated. To combat excess humidity, the exhaust fan can be wired to a Decora preset timer so it can run for a set period of time before automatically shutting off.

Preset Timer (LTB30)

Dimmer (VP106)

Manual-On Occupancy Sensor Remote (IPP0R-1L)
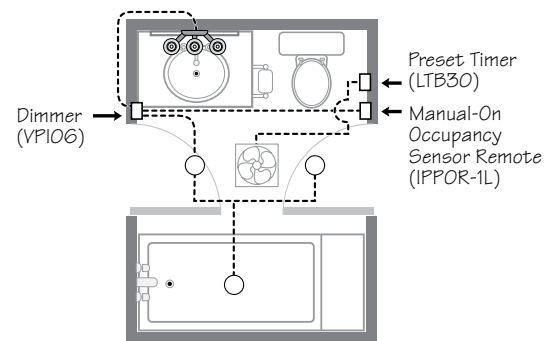
IN THE LAUNDRY ROOM

People often leave the laundry room with their hands full so it's easy to see why the lights there are prone to being left on. The easy solution is to install a vacancy sensor: a manual-on sensor to ensure maximum energy savings. If meeting codes such as California Title 24 is not an issue, consider installing a standard Leviton Wall Switch occupancy sensor (PR150 or PR180). Either of these sensors will turn on the lights when motion is detected, which is convenient when carrying a heavy basketful of laundry.

Manual-On Vacancy Sensor (IPP15-1L)
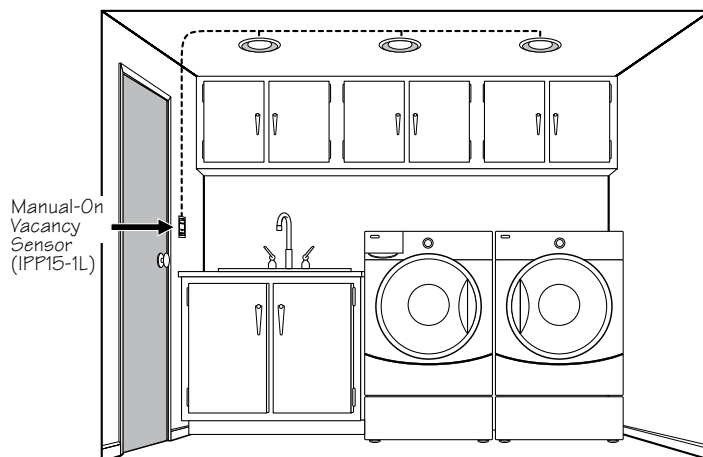
OUTSIDE THE HOUSE

Exterior lighting is one of the most basic home security measures but there's a downside: if left on, these lights can waste a lot of electricity. Adding sensors and timers to the scenario allows exterior lights to turn and remain on only when they have value from a security or safety perspective. With outdoor motion sensors, lights turn on only when needed and for a limited period of time. Timers, on the other hand, can illuminate entrances to deter would-be trespassers. A Compact Fluorescent Ceiling Lampholder with an Occupancy Sensor inside the garage can automatically turn the lights on when a car or person enters the garage and off automatically when the car or person exits.

Motion Sensor with Integral Light (RS110-1F)

Compact Fluorescent Ceiling Lampholder with Occupancy Sensor (9863)

Programmable Timer (VPT24)
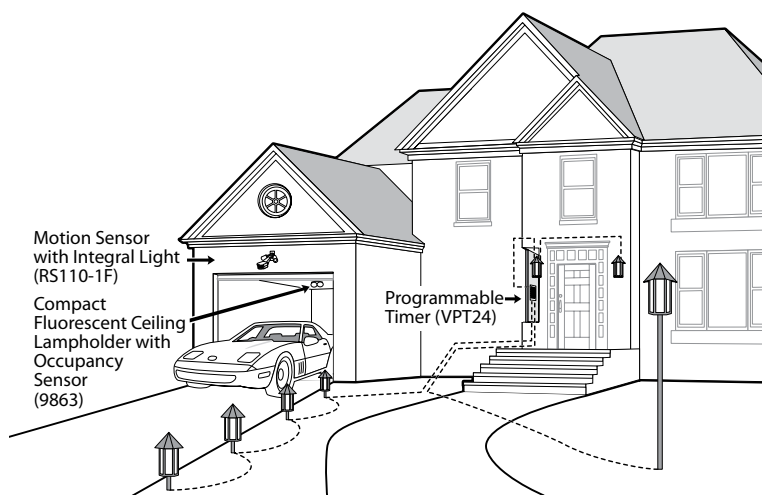
SERVICE AND SUPPORT DURING EVERY STEP OF THE PROCESS

There is much more to making lighting more energy efficient than just installing a simple device or two. System design, product selection, installation and service: it has all got to come together. That's where Leviton service and support options come in. We'll help you design your system and make the right product selections so you can create a lighting control system that does exactly what you want it to do while saving electricity, meeting codes and standards, and even garnering rebates.

It all starts with the Leviton sales representative. Our lighting control specialists are here to support you every step of the way. They can perform on-site facility audits and suggest specific products and strategies for improving lighting energy efficiency.

EXCLUSIVE WEALTH OF RESOURCES

- Occupancy sensor layout services – have a team of experts create occupancy sensor layouts directly on your CAD drawings, complete with a List of Equipment at no cost – go to portal.leviton.com
- LightLogger® Program – get an accurate estimate of your energy-savings potential with this exclusive payback analysis tool – go to www.leviton.com/logger
- ez-Learn – get sensor smart in just 90 minutes from the comfort of your home or office with this exclusive 24/7 online training – go to www.leviton.com/ezlearn
- ASAP Lighting Design software – point-and-click software allows you to quickly and simply design, specify and enter orders – go to www.leviton.com/asap
- Find more exclusive no cost design tools at www.leviton.com/lesdesign
- Lighting control specialists at your disposal
- Field service engineers for top-level support
- Factory commissioning service
- Dedicated technical support via phone at 800 959-6004

CONTACT YOUR LOCAL LEVITON LIGHTING CONTROL SPECIALIST TO GET YOUR FREE ENERGY AUDIT, OR CALL 800-323-8920.

LEVITON LIGHTING ENERGY MANAGEMENT PRODUCTS:

- **LevNet RF™ Energy Harvesting Self-Powered Solutions**
- **Wall Switch, ceiling-mount, wall-mount, fixture-mount and energy harvesting vacancy and occupancy sensors**
- **Outdoor motion sensors**
- **Box-mounted dimmers including Vizia +®, Monet™, Renoir™, Van Gogh™, Mural®, True Touch™, ToggleTouch™, IllumaTech™, SureSlide™ and Trimatron™**
- **Renu® switches, dimmers and outlets**
- **Universal dimmers for dimmable LED, dimmable CFL and incandescent**
- **Zipline™ fluorescent retrofit solution**
- **Dimensions® dimming systems**
- **Preset and programmable electronic timer switches**
- **Relay Systems including GreenMAX®, EZ-MAX® Plus, and miniZ™**
- **Sector® Intelligent Ballast and Lighting Control System**
- **Compact Fluorescent Ceiling Lampholders**

![LEVITON®]

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