LEVITON®

# Energy Management

# Leviton Lighting & Controls

## Lighting and control solutions for your next project.

Every industry, facility, and application has unique 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®, GreenMAX® DRC, Intellect™ and Lumina™ RF systems. Leviton offers an array of lighting control and energy management strategies to meet any application:

- Occupancy and Vacancy Sensing Control - A complete line of PIR, Ultrasonic, Multi-Technology, Microwave, and daylight harvesting sensors
- Wireless Room Controls - GreenMAX DRC Wireless, Lumina™ RF Wireless Room Controls
- Provolt™ Room Controller (PRC), Integrated Room Controller (IRC), and Sapphire™ Room Controller
- Centralized Control - GreenMAX Relay Control System, GreenMAX DRC
- Integrated Controls - Sensors, Intellect
- Metering Solutions - VerifEye™ Submetering Solutions include submetering equipment, data collection and software products, for energy monitoring and tenant billing options

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# Leviton Excellence for Energy Code Standards

ASHRAE 90.1, IECC, and 2022 California Title 24 provides the minimum requirements for energy-efficient design of most commercial and residential buildings. These energy code requirements define the minimum energy efficiency requirements for new construction, as well as new systems installed in existing buildings.

Leviton offers a wide spectrum of lighting and energy control solutions to bring any project up to standard. This reference guide provides examples of common applications, compliance considerations, and Leviton solutions to meet the functionality and standards compliance needs of the space.


## Smart Single Source for Commercial Lighting Controls

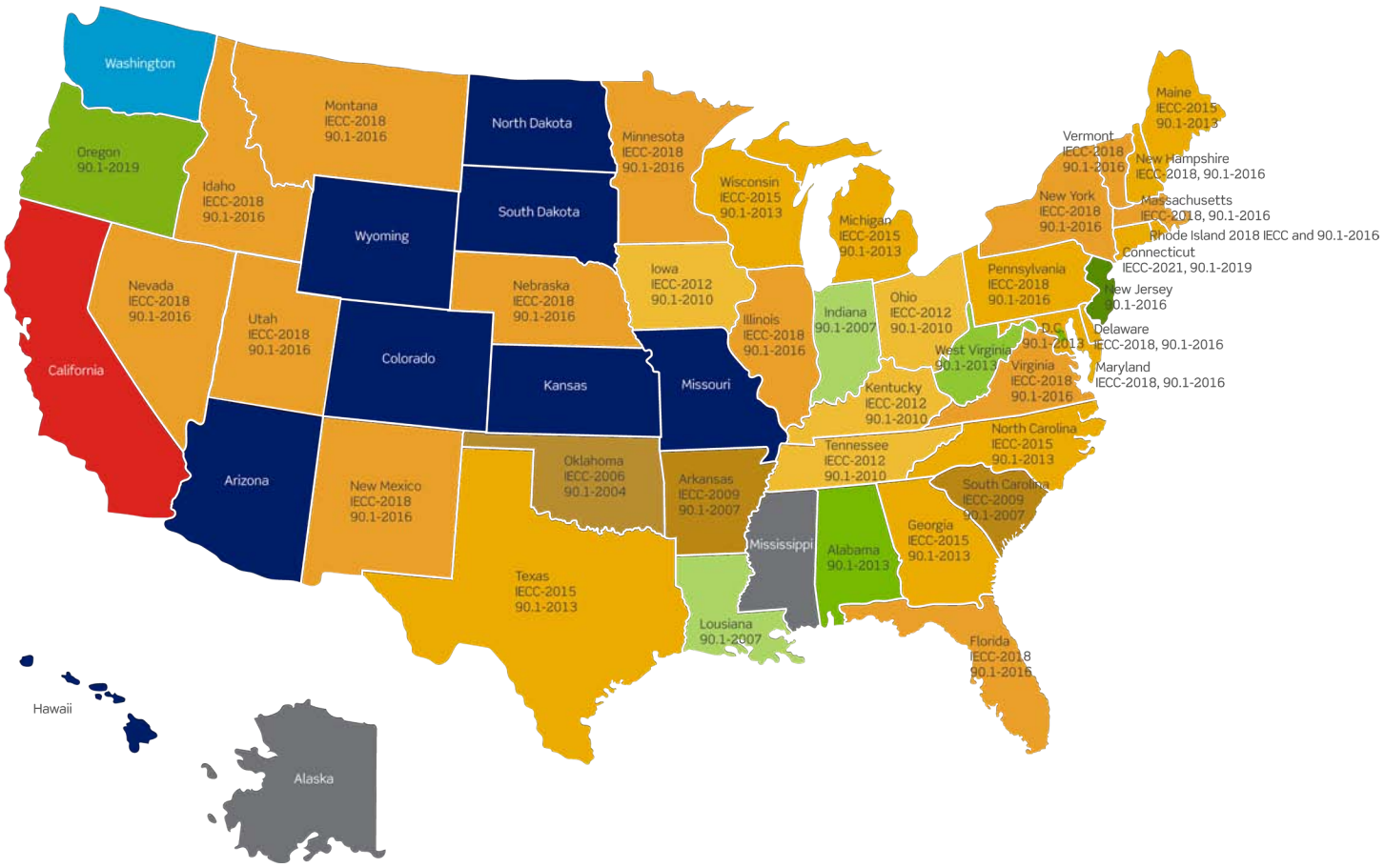
1. GreenMAX® & VerifEye™ 
2. Smart Wallbox Sensor 
3. Sapphire™ Touch Screen 
4. Multi-Tech Sensors 
5. General Lighting with Integrated Fixture Control 
6. Provolt™ Room Controller (PRC) 
7. GreenMAX® DRC 
8. Smart Fixture Mount Sensors 

# Energy Codes & Standards

IECC, ASHRAE 90.1, 2022 Title 24, Part 6, and numerous other local and national codes and standards demand advanced energy-saving controls lighting by either mandating compliance or encouraging it with tax incentives and utility rebates. Programs like LEED Certification offer businesses incentives for meeting benchmarks guided by national codes and standards. In areas such as California, energy efficiency isn't simply an option--it is a requirement to legally operate and occupy buildings.

## Energy Standards By State

Commercial State Energy Code Status as of June 2023
Note: For Canadian code compliance, refer to your provincial code




Source: https://www.energycodes.gov/status/commercial

IECC and ASHRAE 90.1

Home Rule

2023 Washington State Energy Code

ASHRAE 90.1

No Statewide Code

2022 California Title 20 and Title 24

# Energy Codes & Standards

2022 Title 24 is an expansion of the national ASHRAE Standard 90.1 2010/2013/2016/2019/2022, which is a more in-depth version of the national standard guidelines set forth in 2012/2015/2018/2021 IECC. See the table below for an overview of how the codes and standards compare.

Note that the new code additions (2021 IECC, ASHRAE 90.1 2022 and Title 24 2022) are highlighted.

| Control Type | 2021 IECC | ASHRAE 90.1 2022 | 2022 Title 24, Part 6 |
|---|---|---|---|
|  Automatic Receptacle Control | Required in:<br>• Enclosed offices<br>• Conference rooms<br>• Printing/copy rooms<br>• Break rooms<br>• Classrooms<br>• Individual work stations<br>• Either split controlled receptacles shall be provided with the top receptacle controlled, or a controlled receptacle shall be located within 12" of each uncontrolled receptacle<br>• Control via occupancy sensor, time of day, or signal from another control or alarm system<br>• Receptacles to be identified and uniformly distributed | Required in:<br>• Private offices<br>• Conference rooms<br>• Break rooms<br>• Classrooms<br>• Individual workstations<br>• 25% of branch circuit feeders installed for modular furniture<br>• Must be turned off via time-of-day control, or control system/ occupancy sensor after 20 minutes of vacancy<br>• All controlled receptacles shall be permanently marked | Required in:<br>• Private offices<br>• Open office spaces<br>• Reception lobbies<br>• Conference rooms<br>• Kitchenettes<br>• Copy rooms<br>• Hotel/motel guest rooms |
|  Automatic Shutoff | • Automatic time switches are required in most spaces that are not controlled by an occupancy sensor; the switch must also have a manual override and allow for manual control in locations where occupants have ready access<br>• Occupancy sensors must auto-OFF within 20 minutes of occupants leaving the space, and manual-ON or auto-ON to 50% | • Interior lighting must have an automatic control to turn the lights OFF<br>• This device can be a scheduling control, an occupancy sensor, or a BAS/BMS system<br>• Applicable spaces must be capable of the following:<br>• Manual-ON OR partial-ON—auto-ON to 50%<br>• Bi-level control—step between 30-70% or continuous dimming"<br>• Automatic daylight controls<br>• Automatic partial-OFF—reduce to 50% when unoccupied for some spaces<br>• Automatic full-OFF OR scheduled shutoff | • Occupant sensing controls are required for offices 250 sq ft or small and multi-purpose rooms less than 1,000 sq ft, classrooms, conference rooms and restrooms and must automatically shut OFF all lights in 20 minutes or less after the control zone is unoccupied<br>• In office spaces greater than 250 square feet, general lighting shall be controlled with occupant sensing controls. Lighting shall be controlled separately in zones < 600 sq. ft. Luminaires with embedded occupant sensor considered own zone.<br>• Partial-ON may only activate lights between 50-70% power<br>• Controls shall be provided that allow the lights to be manually shut OFF in accordance with Section 130.1(a) |
|  Manual Space Control | • Every area enclosed by walls or floor-to-ceiling partitions must have a manual control<br>• Controls must be located within the area served by the controls, or must be a remote switch clearly identifying the lights it controls with a status indicator<br>• Occupancy sensors must also incorporate a manual control<br>• Manual control to reduce the connected load by at least 50% only in areas controlled by a time switch by controlling all lamps (dimming), dual switching, inboard/outboard switching or controlling each fixture/ lamp independently | • All spaces shall include manual control devices that are continuous or stepped dimming control devices that control an area no larger than 2,500 sq ft if space is smaller than 10,000 sq ft. If 10,000 sq ft or more, then it must control an area no larger than 10,000 sq ft | • Manual-ON/OFF override control is required in each area enclosed by ceiling-height partitions<br>• If lighting is dimmable, controls must be on a dimmer with dimming and manual-ON/OFF capabilities<br>• General/display/ornamental lighting must be separately controlled<br>• Scene controllers may comply with this requirement provided at least one scene turns ON general lighting only, and the control provides a means to manually turn lights OFF |

# Energy Codes & Standards

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Note that the new code additions (2021 IECC, ASHRAE 90.1 2022 and Title 24 2022) are highlighted.

| Control Type | 2021 IECC | ASHRAE 90.1 2022 | 2022 Title 24, Part 6 |
|---|---|---|---|
|  Parking Garage Control | • Must adhere to the standard requirements for lighting control, space control and automatic daylight control with stepped control or continuous dimming OR manual switched daylighting control<br>• Parking garage lighting shall be controlled by an occupant sensor or a time-switch control<br>• Additional lighting controls shall be provided as follows:<br>- Lighting power of each luminaire shall be automatically reduced by not less than 30 percent when there is no activity detected within a lighting zone for 20 minutes<br>- Lighting zones for this requirement shall be not larger than 3,600 square feet | • Parking garage lighting zones must be controlled by a device that reduces power by 30% (50% in 2019) after 20 (10 mins in 2019) mins of vacancy<br>• Open exterior walls must utilize automatic daylight harvesting<br>• Covered vehicle entrances and exits must automatically reduce lighting by 50% from sunset to sunrise<br>• Perime ter fixtures must be controlled in response to daylight | • Occupancy sensors must reduce power with one control step between 20-50% of lighting power<br>• No more than 500W of lighting may be controlled per zone<br>• Automatic controls must turn lights to full-ON and be activated from all paths of egress |
|  Automatic Daylight Control | Daylight response controls shall be provided to control the electric lights within daylight zones in the following spaces:<br>• Spaces with a total of more than 150 watts of general lighting within sidelit zones complying with Section C405.2.3.2 General lighting<br>• Spaces with a total of more than 150 watts of general lighting within toplit zones complying with Section C405.2.3.3<br>• In warehouses, open offices, and corridors where occupancy sensing produces a light-reduction effect, daylight-responsive controls may reduce power further but not raise it above the level set by the occupancy sensor<br>• 300W of installed lighting in the primary and secondary daylight zone, secondary daylight zone controls are required. | • Sidelit and toplit zones must be readily accessible for calibration and located no higher than 11 feet above finished floor. Calibration shall not require the physical presence of a person<br>• Photocell to reduce power to 20% or less and off<br>• General lighting in overlapping toplit and sidelit zones shall be controlled together with the general lighting in the daylight area under the skylights or rooftop monitors | • General lighting in skylit,primary,and secondary daylit zones and combined primary and secondary daylit zones in parking garages shall be provided with controls that automatically adjust the power of the installed lighting up and down to keep the total light level stable<br>• Automatic daylighting controls shall provide separate control for general lighting in each of daylit zone<br>• Automatic daylighting shall:<br>• Adjust lighting via continuous dimming or stepped dimming<br>• Ensure that in areas other than parking garages, the daylight illuminance is greater than 150 percent of the illuminance provided and the controlled lighting power in that daylight zone shall be reduced by a minimum of 90 percent;<br>• Ensure photosensors are not readily accessible to unauthorized personnel and the location where calibration adjustments are made be readily accessible to authorized personnel |

# Energy Codes & Standards

| Control Type | 2021 IECC | ASHRAE 90.1 2022 | 2022 Title 24, Part 6 |
|---|---|---|---|
|  Multi-Level Area Lighting Controls | • Where not provided with occupant sensor controls complying with Section C405.2.1.1, general lighting shall be provided with light reduction controls complying with Section C405.2.3.1<br>• Exceptions include luminaires controlled by daylight responsive controls and luminaires controlled by special application controls | • General lighting in a space shall be manually controlled with continuous dimming to 10% or less of full lighting power in addition to full ON and full OFF | • The general lighting of any enclosed area 100 sq ft or larger with a connected lighting load that exceeds 0.5 watts/sq ft shall provide multi-level lighting controls that adjust the lighting levels up and down |
|  Exterior Lighting Control | • Exterior lighting shall be automatically turned off when daylight is present and satisfies the lighting needs<br>• Building facade and landscape lighting shall automatically shut off from not later than 1 hour after business closing to not earlier than 1 hour before business opening<br>• Lighting that is not controlled in accordance with Section C405.2.7.2 shall comply with the following: Be controlled so that the total wattage of such lighting is automatically reduced by not less than 50 percent by selectively switching off or dimming luminaires at one of the following times:<br>  • From not later than midnight to not earlier than 6 a.m.<br>  • From not later than one hour after business closing to not earlier than one hour before business opening.<br>• During any time where activity has not been detected for 15 minutes or more Luminaires serving outdoor parking areas and having a rated input wattage of greater than 78 watts and a mounting height of 24 feet or less above the ground shall be controlled so that the total wattage of such lighting is automatically reduced by not less than 50 percent during any time where activity has not been detected for 15 minutes or more. | • Auto-OFF Control: Lighting controls required to turn off all lighting the area<br>• Daylight OFF Control: Lighting shall automatically turn off when sufficient daylight is available or within 30 minutes of sunrise.<br>• Scheduled OFF Control: Lighting shall be automatically shut off between midnight or business closing, whichever is later, and 6 a.m. or business opening, whichever comes first<br>• Scheduled Light Reduction Control: Lighting and signage shall be controlled to automatically reduce the connected lighting power by at least 50% from midnight or within one hour of the end of business operations, whichever is later<br>• Occupancy-sensing Light Reduction Control: Lighting shall be controlled to automatically reduce the connected lighting power by a minimum of 50% when no activity has been detected for a time of no longer than 15 minutes. No more than 1500 W of lighting power shall be controlled together.<br>• All time switches shall be capable of retaining programming and the time setting during loss of power for a period of at least ten hours. | • All outdoor lighting must be controlled with a photocontrol and an automatic time switch OR astronomical time switch control<br>• Automatic scheduling and motion sensing controls must be capable of reducing the outdoor lighting power by at least 50% percent and no more than 90%, and separately capable of turning the lighting OFF, during scheduled unoccupied periods<br>• Motion sensing controls are required to reduce outdoor lighting to its dim or OFF state no longer than 15 minutes after the area has been vacated, and of returning the lighting to its ON state when it becomes occupied<br>• Outdoor lighting must remain independently controlled via automatic scheduling<br>• Shall allow scheduling of a minimum of two nighttime periods with independent lighting levels, and may include an override function that turns lighting ON during its scheduled dim or OFF state for no more than two hours when an override is initiated |

# Energy Codes & Standards

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| Control Type | 2021 IECC | ASHRAE 90.1 2022 | 2022 Title 24, Part 6 |
|---|---|---|---|
| Functional Testing | • Functional testing shall be in accordance with Sections C408.3.1.1 through C408.3.1.3 for the applicable control type | • All lighting controls must be tested to ensure they are working properly. The party responsible for the testing cannot be a member of the design or construction team. | • All lighting controls must be tested by a Certified Lighting Control Acceptance Test Technician (CLCATT)<br>• This can be done by the same electrical contractor that did the work if they are CLCATT |
| Demand Response | — | — | • Nonresidential lighting systems subject to the requirements of Section 130.1(b) with a general lighting power of 4,000 watts or greater shall be capable of automatically reducing lighting power in response to a Demand Response Signal<br>• For compliance testing, the lighting controls shall demonstrate a 15 percent or greater reduction in lighting power reduction in controlled spaces of a minimum of 15 percent below the total installed lighting power as described in NA7.6.3<br>• For buildings where demand response controls are required, demand responsive controls shall control general lighting that is subject to requirements of Section 130.1(b) and may control additional lighting<br>• General lighting shall be reduced in a manner consistent with the uniform level of illumination requirements in TABLE 130.1-A<br>• Controlled receptacles in buildings shall be capable of automatically turning off all loads connected to the receptacle in response to a demand response signal in buildings that require to have demand responsive lighting controls |
| Disaggregation of Electrical Circuits | — | — | • Specifications for the separation of 10 types of electrical loads for switchboards, panels and motor control centers required to be disaggregated per Table 130.5-B |

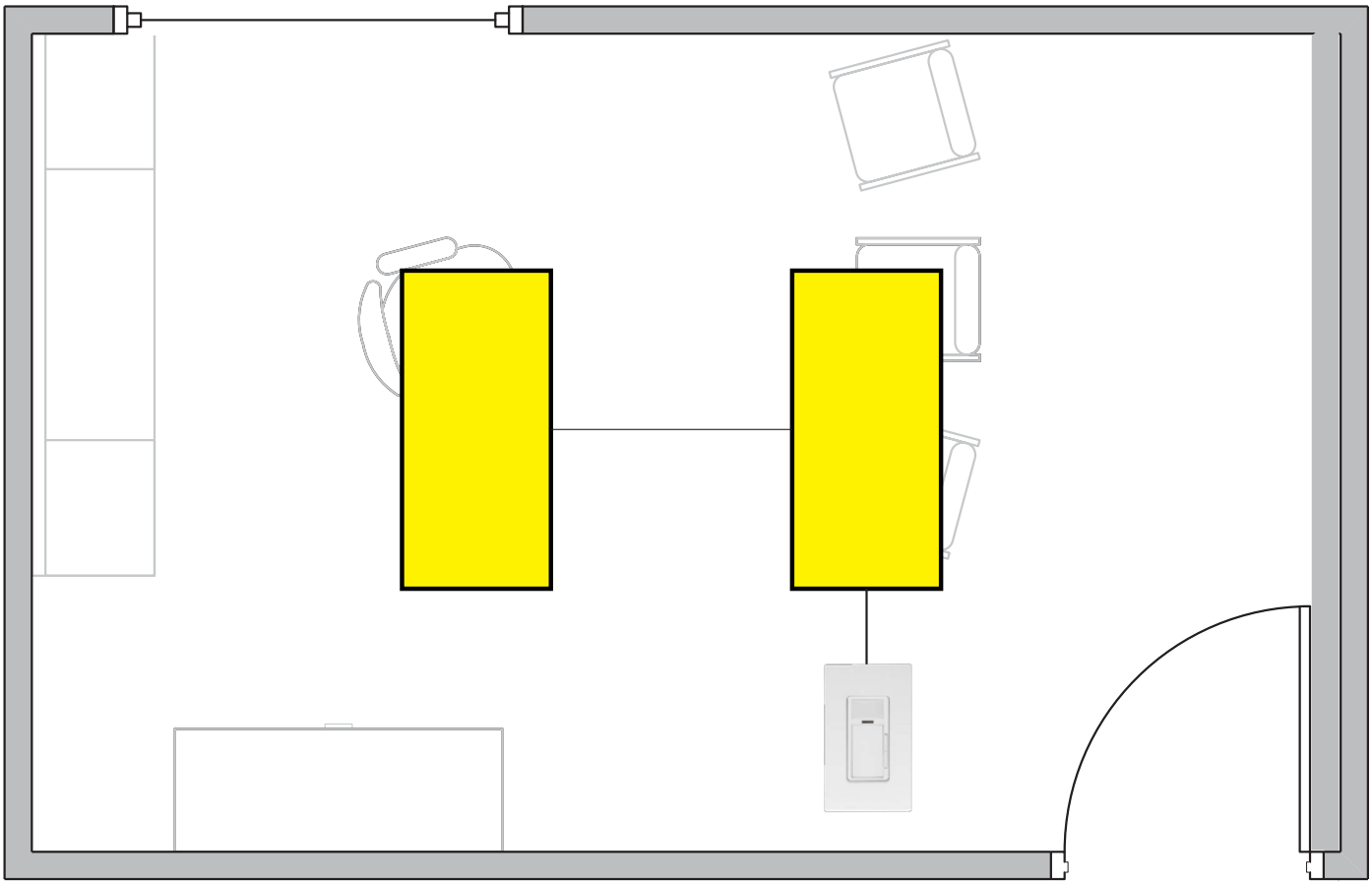
# Energy Codes & Standards

| Control Type | 2021 IECC | ASHRAE 90.1 2022 | 2022 Title 24, Part 6 |
|---|---|---|---|
|  Service Metering | • New buildings with a gross conditioned floor area of 25,000 square feet (2322 m2) or larger shall be equipped to measure, monitor, record and report energy consumption data in compliance with Sections C405.12.1 through C405.12.5<br>• Electrical energy monitoring required for all electrical energy supplied to the building and its associated site<br>• Meters or other approved measurement devices shall be provided to collect energy use data for each end-use category indicated in Table C405.12.2<br>• Meters or other measurement devices required by this section shall be configured to automatically communicate energy consumption data to the data acquisition system required by Section C405.12.4 | • Measurement devices must be installed in new buildings to separately monitor energy use for each of the following:<br>  • Total energy<br>  • HVAC systems<br>  • Interior lighting<br>  • Exterior lighting<br>  • Receptacle circuits<br>• Measurements must record every 15 minutes, be available to each tenant, and maintained for 36 months | • Each electrical service or feeder shall have a permanently installed metering system which measures electrical energy use in accordance with TABLE 130.5-A<br><br>• **EXCEPTION:** Service or feeder for which utility company provides metering system that indicates instantaneous kW demand and kWh for a utility-defined period |

# Featured Solution—Small Office—Single Zone w/Plug Load Control

## Smart Wallbox Sensor

- Simple occupancy/vacancy sensing and dimming solution and fits in a standard wallbox
- Simple pushbutton programming
- Create multi-way capabilities for up to 5 devices on all models with Leviton Push to Pair (P2P) process
- App based configuration and customization make for a convenient, affordable solution that meets a range of needs



**Features:**

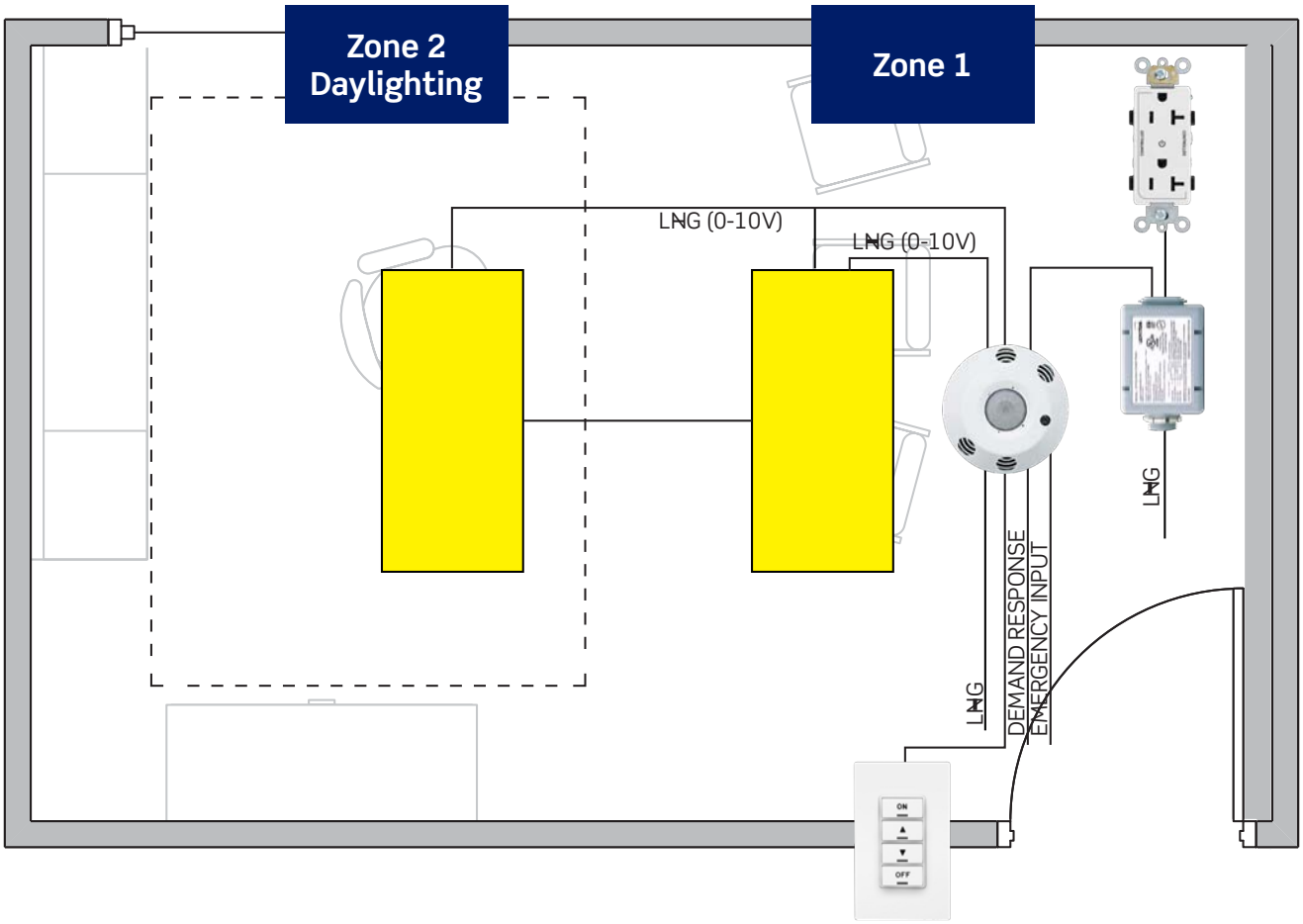
- 0-10V Dimming and Partial-ON/OFF and Auto-ON/OFF Control
- Occupancy or Vacancy Sensing
- Sensitivity Timeouts

| What you will need | | Quantity |
|---|---|---|
|  | **Smart PIR 0-10V Dimming Wallbox Sensor**<br>ODD10-IDW/ODD10-IDI | 1 |

# Featured Solution—Small Office—Dual Zone

## Provolt™ Room Controller (PRC)

- Comprehensive solution integrates multiple lighting control strategies—occupancy sensing, 0-10V dimming, daylight harvesting, partial-ON, partial-OFF and demand response
- Combined line voltage multi-technology or PIR sensor, power pack and photocell in a self-contained, easy-to-install device
- Configure and test controls from an Android or Apple smart device via the Provolt Bluetooth Mobile App—reduces callbacks




**Features:**

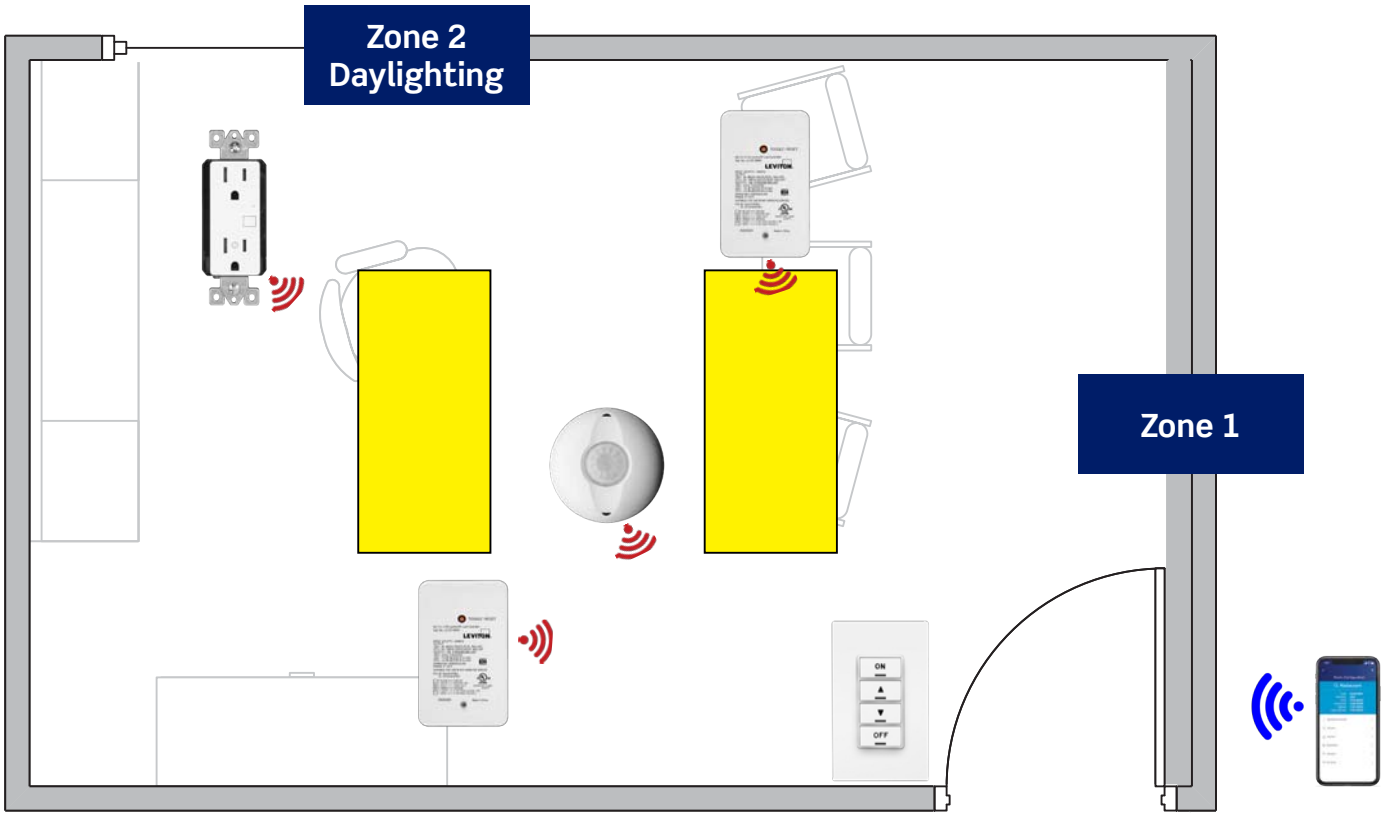
- 0-10V Dimming Control
- Self-contained occupancy sensor, photocell and power pack
- Occupancy or Vacancy Sensing with Auto-OFF
- Auto Calibration
- Daylighting Set Point Adjustment through Entry Station
- Emergency Input
- Decora® 4-Button Entry Station
- Plug Load Control
- Time Clock Input
- Demand Response

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **Provolt Room Controller (PRC)**<br>O5C04-IDW | 1 |
|  | **Provolt Low-Voltage Keypad, 4-Button**<br>PLVSW-4LW | 1 |
|  | **OPP20 Super Duty Power Pack**<br>OPP20-0D1 | 1 |
|  | **Marked "Controlled" Receptacles**<br>16352-2PW | 5 |

# Featured Solution—Small Office—Dual Zone

## GreenMAX® DRC Wireless with 0-10V Dimming

- Fully distributed room control system
- Room agnostic—each room operates independently of other rooms—not dependent on network processors or centralized controllers for operation
- Easy-to-specify, scalable—add and rearrange products to accommodate the evolving needs of any application, and re-zone/re-group and adjust settings with ease through the GreenMAX DRC App for smart devices




**Features:**

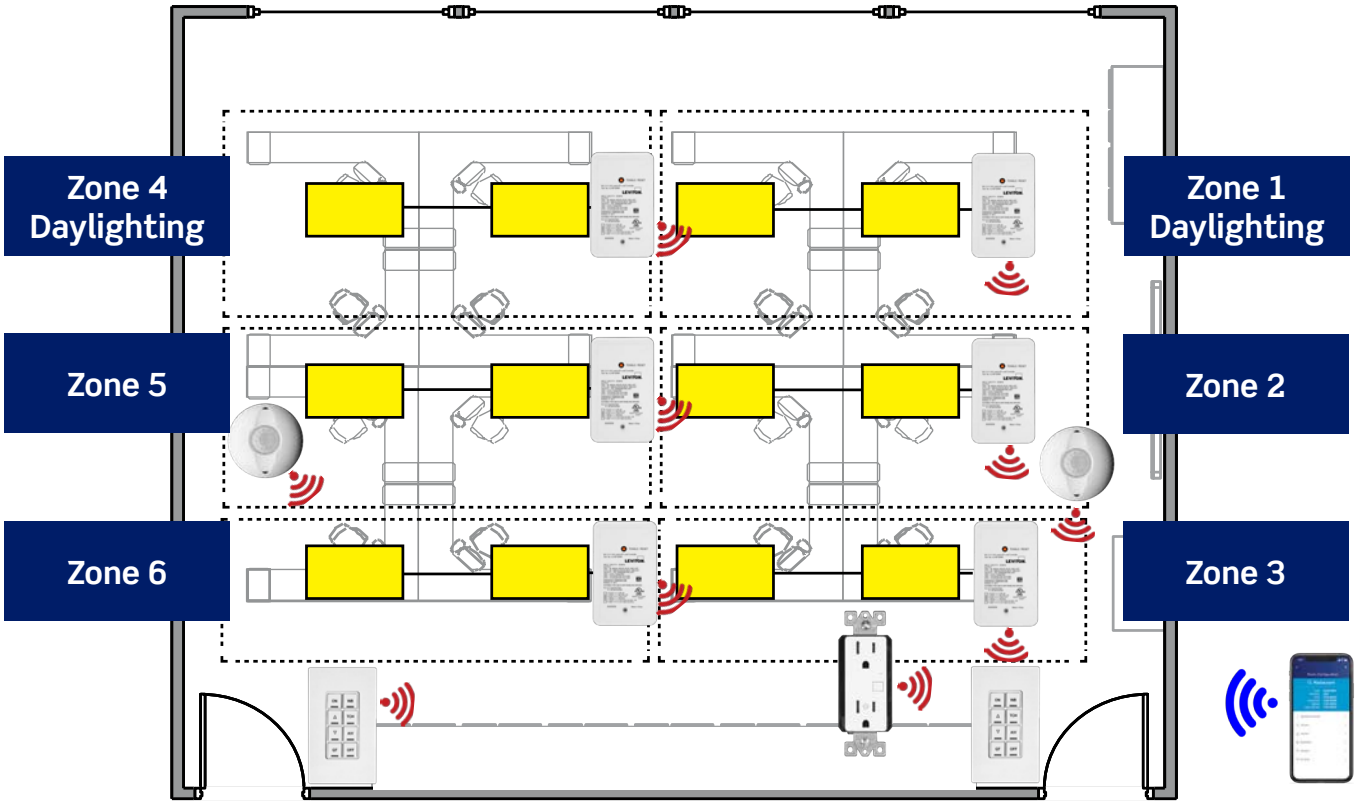
- Wi-Fi Networking
- 2 Zones
- Occupancy/Vacancy Sensing
- Scheduling
- Scene Control
- 0-10V Dimming
- Plug Load Control

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **GreenMAX DRC 4-Button Wireless Keypad Room Controller**<br>DRKDN-U4W | 1 |
|  | **Wireless 10A, 0-10V Dimming Power Pack**<br>LU107-DNW | 2 |
|  | **Zigbee PIR Occupancy Sensor & Photocell**<br>ZC015-BIW | 1 |
|  | **Zigbee Controlled Receptacle**<br>ZSTLR-1HW | Varies |

# Featured Solution—Open Office—9 Zone

## GreenMAX® DRC Wireless Room Control System

- Fully distributed room control system
- Room agnostic—each room operates independently of other rooms—not dependent on network processors or centralized controllers for operation
- Easy-to-specify, scalable—add and rearrange products to accommodate the evolving needs of any application, and re-zone/re-group and adjust settings with ease through the GreenMAX DRC App for smart devices




**Features:**

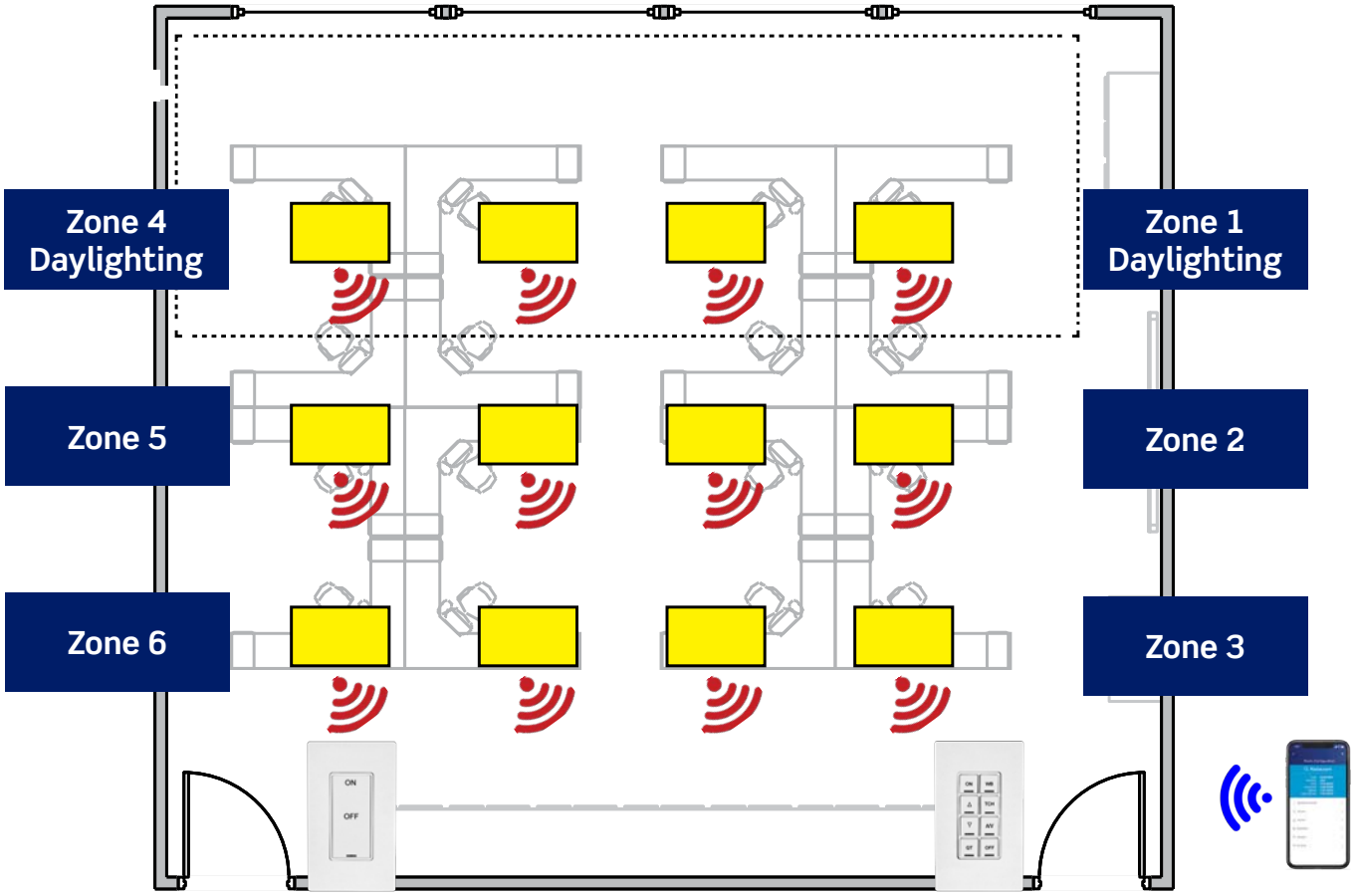
- Multiple zones
- Occupancy/Vacancy Sensing
- Scheduling
- Scene Control
- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting
- Wi-Fi Networking

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **GreenMAX DRC 8-Button Wireless Keypad Room Controller**<br>DRKDN-U8W | 1 |
|  | **8-Button Wireless Multi-Way Remote**<br>DLDNK-08W | 1 |
|  | **Wireless 10A, 0-10V Dimming Power Pack**<br>LU107-DNW | 6 |
|  | **Zigbee PIR Occupancy Sensor & Photocell**<br>ZC015-BIW | 2 |
|  | **Zigbee Controlled Receptacle**<br>ZSTLR-1HW | Varies |

# Featured Solution—Open Office

## GreenMAX® DRC Wireless with Intellect-Enabled Fixtures

- Fully distributed room control system
- Room agnostic—each room operates independently of other rooms—not dependent on network processors or centralized controllers for operation
- Easy-to-specify, scalable—add and rearrange products to accommodate the evolving needs of any application, and re-zone/re-group and adjust settings with ease through the GreenMAX DRC App for smart devices




**Features:**

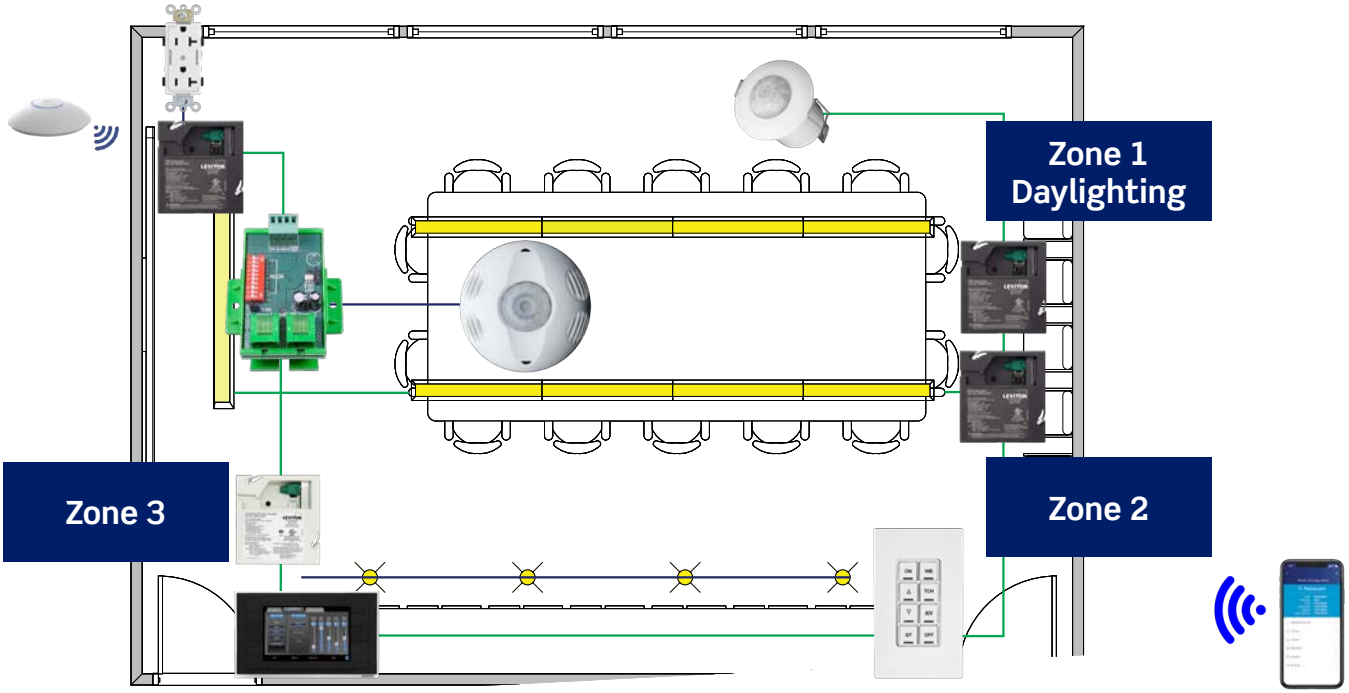
- Multiple zones
- Occupancy/Vacancy Sensing
- Scheduling
- Scene Control
- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting
- Wi-Fi Networking

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **GreenMAX DRC 8-Button Wireless Keypad Room Controller**<br>DRKDN-U8W | 1 |
|  | **1-Button Wireless Multi-Way Remote**<br>DLDNK-01W | 1 |
|  | **Intellect-enabled Fixture**<br>LRTH2x2-LED835UNV-LV01 | 12 |

# Featured Solution—Conference Room

## GreenMAX® DRC Wired with 0-10V Dimming

- Fully distributed room control system
- Room agnostic—each room operates independently of other rooms—not dependent on network processors or centralized controllers for operation
- Easy-to-specify, scalable—add and rearrange products to accommodate the evolving needs of any application, and re-zone/re-group and adjust settings with ease through the GreenMAX DRC App for smart devices




**Features:**

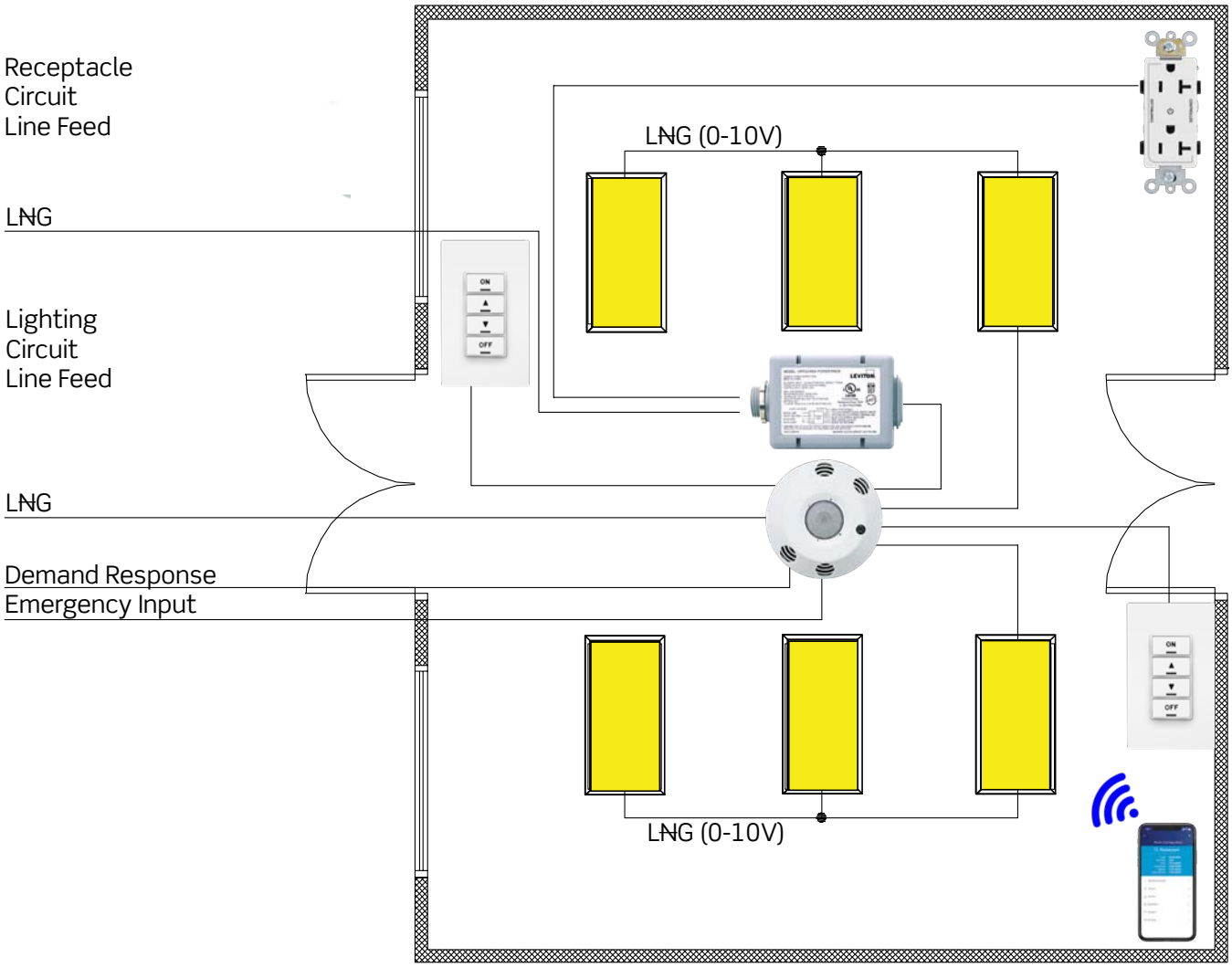
- Multiple zones
- Occupancy/Vacancy Sensing
- Scheduling
- Scene Control
- Daylighting
- Multi-Way Switching
- Plug Load Control
- Emergency Lighting

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | GreenMAX DRC<br>Line Voltage Room Controller<br>DRC07-ED0 | 1 |
|  | GreenMAX DRC<br>0-10V Smart Pack<br>DRD07-ED0 | 3 |
|  | GreenMAX DRC<br>Digital Sensor<br>OSR05-ICW | 1 |
|  | GreenMAX DRC<br>Analog Interface (AI)<br>DRID0-C02 | 1 |
|  | Analog Occupancy Sensor<br>OSCxx-MWW | 1 |
|  | GreenMAX DRC<br>8-Button Digital Keypad<br>DRKDN-C8W | 1 |
|  | Sapphire™ Touch Screen<br>TS007-000 | 1 |
|  | Marked Controlled Receptacles<br>16352-2PW | 1 |
|  | PoE ACCESS POINT<br>EMA00-000 | 1 |

# Featured Solution—Common Area

## Provolt™ Room Controller (PRC)

- Comprehensive solution integrates multiple lighting control strategies—occupancy sensing, 0-10V dimming, daylight harvesting, partial-ON, partial-OFF and demand response
- Combined line voltage multi-technology or PIR sensor, power pack and photocell in a self-contained, easy-to-install compact device
- Configure and test controls from an Android or Apple smart device via the Provolt Bluetooth Mobile App—reduces callbacks




**Features:**

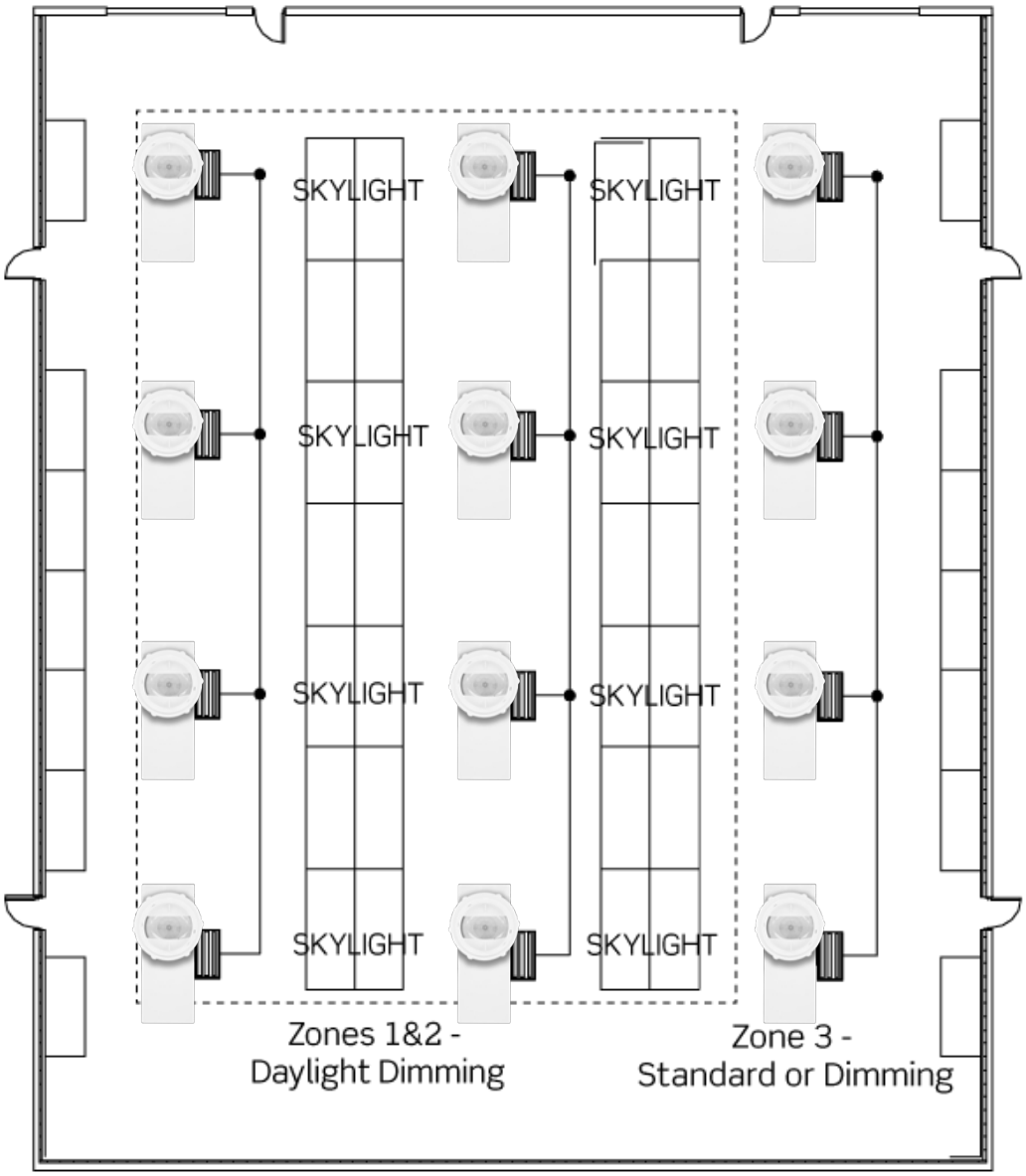
- 0-10V Dimming Control
- Self-Contained Occupancy Sensor, Photocell and Power Pack
- Vacancy or Occupancy Sensing with Auto-OFF
- Auto Calibration
- Daylighting Set Point Adjustment through Entry Station
- Emergency Input
- Decora® 4-Button Entry Station
- Plug Load Control
- Time Clock Input
- Demand Response

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **Provolt Room Controller (PRC)**<br>O5C04-IDW | 1 |
|  | **Provolt Low-Voltage Keypad, 4-Button**<br>PLVSW-4LW | 2 |
|  | **OPP20 Super Duty Power Pack**<br>OPP20-0D1 | 1 |
|  | **Marked "Controlled" Receptacles**<br>16352-2PW | 5 |

# Featured Solution—Warehouse

## Smart PIR Integrated Fixture Mount Sensor

- Designed for use with switching or 0-10V dimming ballasts/drivers
- Mounting heights from 8-40 ft.
- Multiple daylight modes as well as partial-OFF operation
- High and low bay lenses
- Auto and manual calibration
- Out-of-the-box configuration default modes




**Features:**

- Occupancy Sensing
- Daylight Harvesting
- 0-10V LED Control
- Variable Time Delay
- False Detection Protection

| What you will need (sold separately) | | Quantity |
|---|---|---|
|  | **Smart PIR Integrated Fixture Mount Sensor**<br>ZLD1Z-I0W | 1 per fixture |

## 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.

### Microwave

Microwave sensors are active devices that use high frequency waves to detect frequency (Doppler) shifts from motion in a space. They can be mounted in most building materials and work like a radar gun to sense the speed and size of motion.

### Microphonics

Microphonics is an audio technology that uses a microphone inside of an occupancy sensor to hear sounds indicating occupancy.

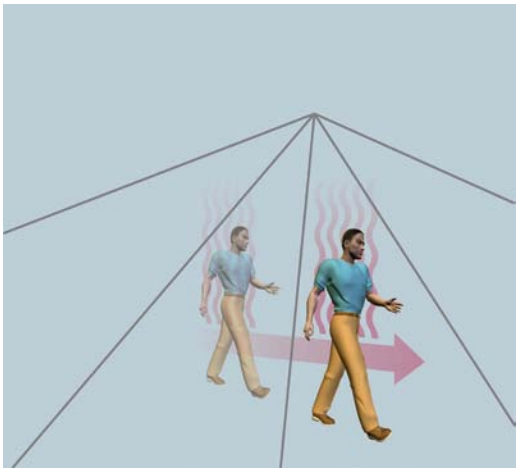
### Adaptive Definition

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

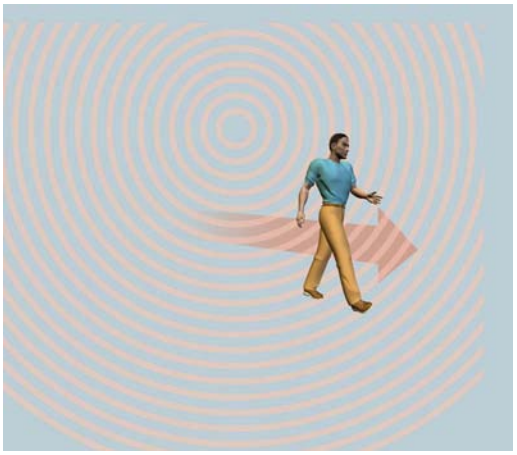
### Passive Infrared (PIR)

- Uses infrared heat from the human body to detect occupancy
- 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 areas with high levels of occupant motion



### Ultrasonic (US)

- 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
- Locate sensors away from doorways, room openings or adjacent areas, or closer than 6 feet of HVAC ducts to avoid unwanted sensing of motion
- Most effective when mounted at a height of 8-10 feet



### Multi-Technology

- 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

### Microwave

- Designed to be used in conjunction with passive infrared (PIR) sensing within a space
- Designed for installation in a variety of settings including any space used by a multi-tech sensor
- Most effective when mounted at a height of 8 feet or lower

### Microphonic

- Designed to detect sounds made by human activities such as talking and typing
- It does not recognize building noises such HVAC and equipment sounds

## About Sensor Design

| Sensor Type | When to Use |
|---|---|
| Wallbox/Wall Switch  | This sensor replaces an existing wall switch. Get both occupancy sensing and manual on/off switching or dimming in a single device. |
| Ceiling-Mount  | For 180° or 360° coverage of an area |
| Wall-Mount/Corner-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. These streamlined solutions save time, money, and energy with easy installation and operation, easy energy savings, and out-of-the-box operation with no commissioning required. They offer less wiring for new construction and retrofits, and are easily programmed using an IR remote or a mobile app on a smart device. |

## 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:**

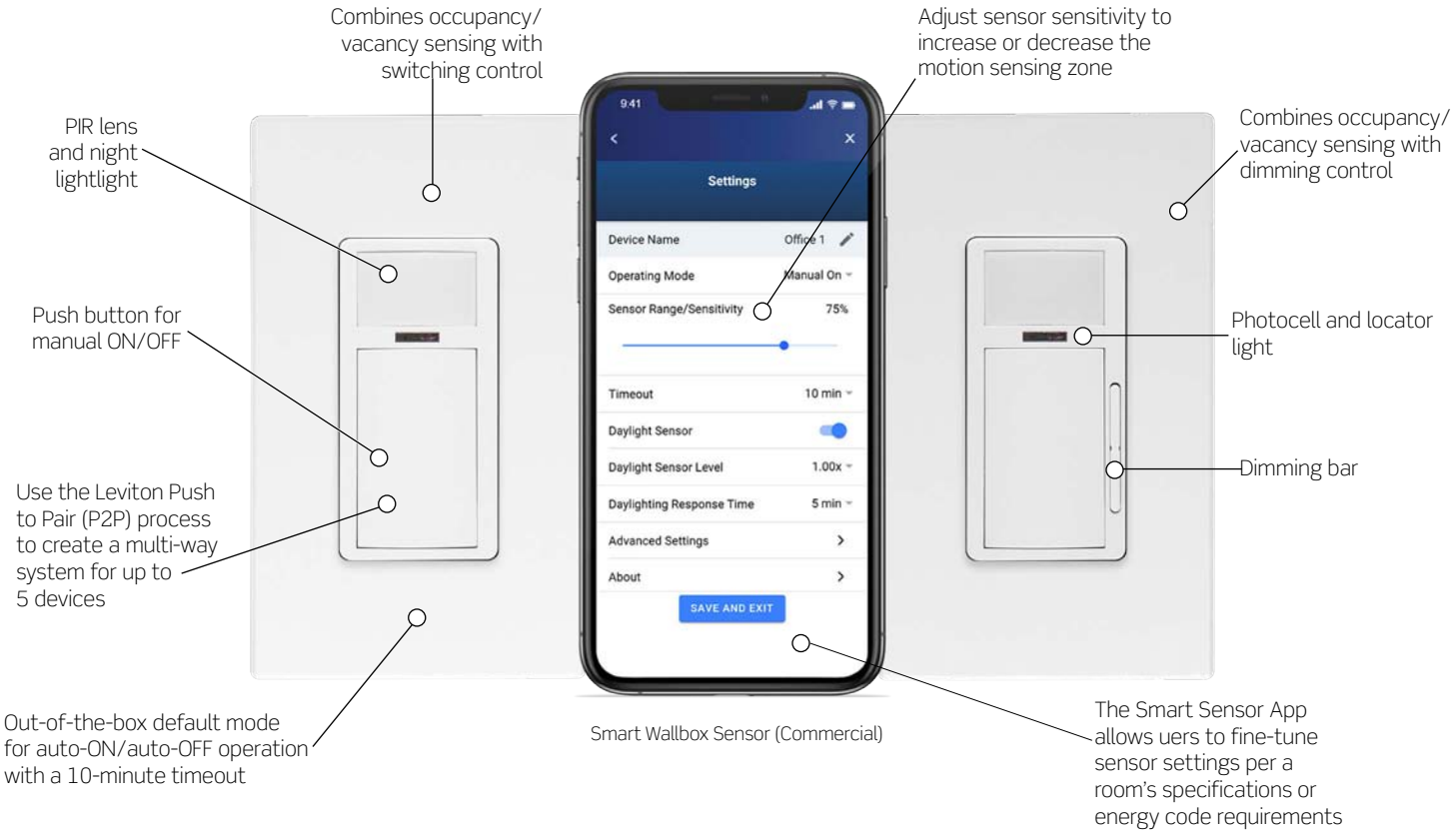
- Size and shape of area needing coverage compared to ranges of occupancy sensors
- Obstacles that may block the sensor's line of sight
- How much activity there is in a space
- Ceiling height
- Airflow that can falsely register as motion
- Location of HVAC ducts

## Occupancy Layout Services

Leviton's Lighting and Energy Solutions team 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 portal.leviton.com.**

# Wall Switch Occupancy Sensors

Leviton offers a wide section of occupancy and vacancy sensors for residential and commercial applications. From all and ceiling mounted to wall switch and wireless, with passive infrared, ultrasonic or multi-technology sensing; Leviton sensors provide smart energy saving solutions for both indoor and outdoor use.




## Definition of Occupancy, Vacancy, Motion, and Humidity Sensors

| Type of Sensor | Definition |
|---|---|
| **Occupancy** | A device with which the lights/load automatically turn ON when motion is detected within an area and automatically OFF after a designated period of time passes from the point the area was vacated |
| **Vacancy** | A device with which the lights/load must be manually turned ON but will automatically turn OFF after a designated period of time passes from the point the area was vacated |
| **Motion** | An occupancy sensor used for exterior areas |
| **Humidity** | Detects excess humidity in a room and activates the ventilation fan to lesson condensation, will automatically turn OFF the fan when the humidity level has dropped |

**Color Choices** Occupancy Sensing control devices are offered in a wide range of colors. To order colors, add suffix to Cat. No.

White (-W) | Ivory (-I) | Light Almond (-T) | Gray (-G/-GY) | Black (-E) | Red (-R)

**Note:** Not all models come in all colors. Color Change Kits available for specific devices. See listings for details

# Smart Wallbox Sensors

Smart Wallbox Sensors combine occupancy/vacancy sensing with 0-10V dimming or ON/OFF switching control to deliver a simple solution for easy energy savings, local control and code compliance. Enable and configure additional features with the Smart Sensor App.

## Features and Benefits

- Integrates occupancy/vacancy sensing and 0-10V dimming (ODD10-IDx/ODD24-IDW) or ON/OFF switching (ODS15-IDx/ODS15-I1x)
- Vacancy mode for Manual-ON/Auto-OFF operation (ODP10-I1W)
- Easy programming and configuration out-of-the-box default mode for auto-ON/auto-OFF operation with a 10-minute timeout as well as convenient pushbutton programming for common applications
- Use the Leviton Push to Pair (P2P) process to create a multi-way system for up to 5 devices
- Enable multi-way capabilities with an OTA update for all models
- App programmable for easy advanced configuration using the Smart Sensor App:
  - Select the operating mode (occupancy/vacancy)
  - Adjust sensor sensitivity and timeouts
  - Enable the integrated photocell for daylighting hold-OFF
  - Activate the nightlight feature with a wide selection of RGB colors
  - Customize the LED indicator and locator lights
  - Name sensors within the App to distinguish individual spaces
  - Create a security code to lock configuration settings
- For dimming models, set partial-ON / partial-OFF levels and partial-OFF timeouts
- Multi-way with up to 5 devices
- Can be used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6 occupancy/ vacancy sensing and dimming (ODD10/ODD24) or manual control (ODS15) requirements
- Some models have antimicrobial treated plastic to help keep surfaces cleaner and prevent microorganisms from degrading the product
- This product contains an antimicrobial agent to inhibit the growth of mold, mildew, fungus and odor-causing bacteria that cause discoloration, staining, deterioration or corrosion on the surface of the device in between normal cleaning

## Smart Wallbox Sensors

| Description | Coverage | Rating | Cat. No. | Color* |
|---|---|---|---|---|
| Smart PIR 0-10V Dimming Wallbox Sensor | 180°, 1100SF (102SM) | 120VAC, 60HzGeneral Purpose @ 120V: 10A<br>General Purpose @ 277V: 10A<br>LED/Electronic Ballast @ 120V: 8A<br>LED/Electronic Ballast @ 277V: 5A<br>Standard Ballast @ 120V, 277V: 10A<br>Tungsten @ 120V, 277V: 6.67A<br>Motor @ 120V: 1/4HP (FLA 5.8A)<br>Motor @ 277V: 1/3HP (FLA 3.0) | ODD10-ID | W, I |
| Smart PIR 0-10V Antimicrobial Wall Switch Sensor | | | 011-ODD10-IDW | W* |
| | | | 012-ODD10-IDI | I |
| Smart PIR Wall Switch Sensor | | General Purpose @ 120V, 277V: 20A<br>LED/Electronic Ballast @ 120V, 277V: 10A<br>Standard Ballast @ 120V, 277V: 10A<br>Tungsten @ 120V, 277V: 6.67A<br>Motor @ 120V: 1/4HP (FLA 5.8A)<br>Motor @ 277V: 1/3HP (FLA 3.0)<br>No Neutral Required | ODS15-ID | W, I* |
| Smart PIR Wall Switch Sensor | | General Purpose @ 120-277VAC, 60Hz<br>LED/Electronic Ballast @ 120V, 277V: 10A<br>Standard Ballast @ 120V, 277V: 10A<br>Tungsten @ 120V, 277V: 6.67A<br>Motor @ 120V: 1/4HP (FLA 5.8A)<br>Motor @ 277V: 1/3HP (FLA 3.0)<br>Neutral Required | ODS15-I1 | W, I* |

ODD10/ODD24

*Color Change Kits available for Black, Red, Gray, Light Almond and White.

**Note:** Antimicrobial Wallplate sold separately. Order 80401-2AW, 1-Gang Decora Antimicrobial Wallplate.

## Smart Wallbox Sensors

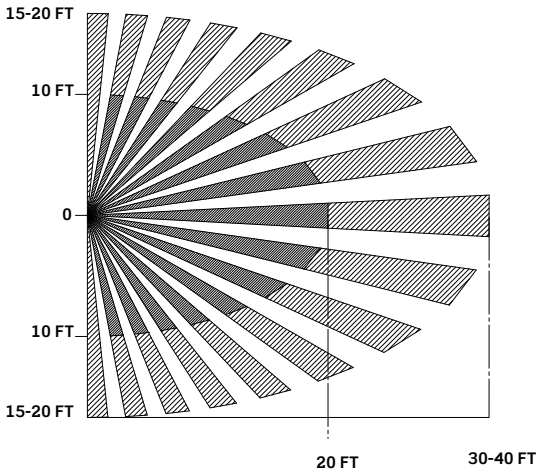
| Description | Coverage | Rating | Cat. No. | Color* |
|---|---|---|---|---|
| Smart PIR Antimicrobial Wall Switch Sensor | 180°, 1100SF (102SM) | General Purpose @ 120V, 277V: 20A<br>LED/Electronic Ballast @ 120V, 277V: 10A<br>Standard Ballast @ 120V, 277V: 10A<br>Tungsten @ 120V, 277V: 6.67A<br>Motor @ 120V: 1/4HP (FLA 5.8A)<br>Motor @ 277V: 1/3HP (FLA 3.0)<br>No Neutral Required | 030-ODS15-GDW | W |
| | | | 031-ODS15-GDI | I |
| | | | 022-ODS15-IDW | W |
| | | | 018-ODS15-IDI | I |
| | | General Purpose @ 120V: 20A<br>LED/Electronic Ballast @ 120V: 10A<br>Standard Ballast @ 120V: 10A<br>Tungsten @ 120V: 6.67A<br>Motor @ 120V: 1/4HP (FLA 5.8A)<br>Neutral Wire Required | 017-ODS15-I1W | W |
| | | | 019-ODS15-I1I | I |
| Smart PIR 24V Dimming Wallbox Sensor | | 12-24VDC | ODD24-ID | W* |
| Smart PIR Antimicrobial 24V Dimming | | | 011-0DD24-IDW | |
| Smart PIR 1000W Dimming Wallbox Sensor | | LED, CFL, Electronic Ballasts @ 120V 100W<br>Magnetic Ballasts @ 120V 100W<br>Resistive, Tungsten @ 120V 100W<br>Motor @ 120V Not rated for use | ODP10-I1* | W, I |
| Smart PIR Antimicrobial 1000W Dimming Wallbox Sensor | | | 011-ODP10-ILW | W |
| | | | 012-ODP10-I1W | I |

*Color Change Kits available for Black, Red, Gray, Light Almond and White.
**Note:** Antimicrobial Wallplate sold separately. Order 80401-2AW, 1-Gang Decora Antimicrobial Wallplate.

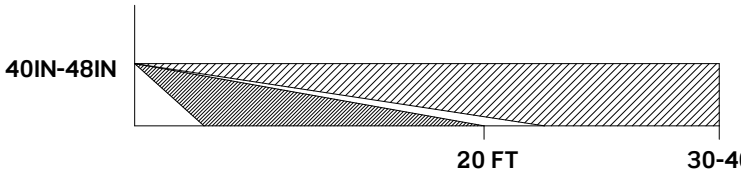
ODS15

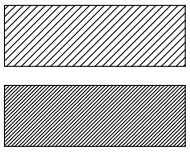
ODP10

## Field of View, in feet




Field-of-View (Horizontal)



**Major motion coverage 1100ft^2 (102m^2)**

**Minor motion coverage 400ft^2 (37.2m^2)**

Field-of-View (Vertical)

# PIR Occupancy, Vacancy and Humidity Motion Sensor Light Switches

Leviton's line of Motion Sensors provides a cost-effective solution for all your residential needs. The devices offer flexible single pole or 3-way installation options, including wiring with a neutral or by using an earth ground connection, and a slim profile for ease of installation. These features make them ideal for new construction and for retrofit in older wallboxes with limited space.

## Features and Benefits

- Automatic-ON or Manual-ON models available
- Leaded terminals for easier installation
- Programmable without removing the wallplate or faceplate
- Shallow design easily fits in the wallbox
- Controls LED, CFL, Incandescent, Halogen, Magnetic Low Voltage, Electronic Low Voltage or Motor loads
- Provides 180° Field-of-View, 900 sq. ft. coverage
- Low profile design blends in with walls for a discreet appearance
- Ambient light override prevents occupancy sensors from switching the lights ON when there is ample natural sunlight
- Adjustable delayed OFF time which can be set for 1 minute, 5 minutes, 10 minutes or 20 minutes
- Adjustable Range (sensitivity) to fit various coverage areas
- Contemporary styling in line with Leviton's Decora® wiring devices
- Compatible with Decora® Plus screwless wallplates
- Color change kits are available
- Occupancy models have setting to switch to a vacancy sensor for a specific activity or to meet code requirements
- Can be used to comply with 2022 California Title 24, Part 6 Vacancy Control Device Requirements

**DOS02, DVS02, DOS05, DVS05**

- Flexible wiring can be connected to Neutral wire if Neutral is present in the wallbox or Earth ground if no Neutral wire is present in the wallbox
- Interchangeable line and load wires
- DOS05 and DVS05 are Single Pole or 3-way when used with a single pole or 3-way switch

**DOS15, DVS15**

- Requires a neutral wire for installation
- Single Pole or 3-way when used with a DD0SR
- Switch Companion, or can be used in 3-way with an additional DOS15 or DVS15 sensor

**D0D05**

- Flexible wiring can be connected to Neutral wire if Neutral is present in the wallbox or Earth ground if no Neutral wire is present in the wallbox
- DOD05 are Single Pole/Single Pole
- Countdown timer on each load

## Decora® Residential Grade Wall Switch Infrared Motion Sensors

| Description | Cat. No. | Color* | Rating |
|---|---|---|---|
| Decora Wall Switch PIR Motion Sensor, Relay Occupancy Sensor, single pole, 180° Field-of-View, 900 sq. ft. coverage | DOS02-0L | W | 150W LED/CFL, 250W Inc/ Halogen, 250VA ELV, 200VA MLV, 2A Resistive |
| | DOS02-IL | I, T | |
| Decora Wall Switch PIR Motion Sensor,Relay Vacancy Sensor, single pole,180° Field-of-View, 900 sq. ft. coverage | DVS02-1L | W | |
| Decora Wall Switch PIR Motion Sensor, Relay Occupancy Sensor, single pole/3-way, 180° Field-of-View, 900 sq. ft. coverage | DOS05-1L | Z* W | 300W LED/CFL, 600W Inc/ Halogen,400VA ELV/MLV, 1/4 HP Motor, 5A Resistive |
| Decora Wall Switch PIR Motion Sensor, Relay Vacancy Sensor, single pole/3-way, 180° Field-of-View, 900 sq. ft. coverage | DVS05-1L | | |
| Decora Wall Switch PIR Motion Sensor, Relay Occupancy Sensor, single pole/multi-sensor/multi-way, 180° Field-of-View, 900 sq. ft. coverage | DOS15-1L | | 600W LED/CFL,1800W Inc/ Halogen,1200VA ELV/MLV/FL, 1/2 HP Motor,15A Resistive |
| Decora Wall Switch PIR Motion Sensor, Relay Vacancy Sensor, single pole/multi-sensor/multi-way, 180° Field-of-View, 900 sq. ft. coverage | DVS15-1L | | |

*To order colors, add suffix to basic Cat. No. Products with suffix (-Z) include White, Ivory and Light Almond

DOS02/05

DVS05

# Decora® Residential Grade Wall Switch Humidity Sensor and Fan Control

## Features and Benefits

- Automatically detects rising humidity and activates ventilation fan
- Manual ON option to address immediate ventilation needs
- Replaces a single pole switch for control of a ventilation fan or a fan/light combination, or a combination switch for separate control of fan and lighting
- For use with ventilation fans up to ¼ HP
- Compatible with LED, CFL, Incandescent, Halogen, MLV and ELV lighting loads
- Flexible wiring can be connected to Neutral wire if Neutral is present in the wallbox; or to Earth ground if no Neutral wire is present in the wallbox
- Interchangeable line and load wires (DHS05 model only)
- Microprocessor control with digital sensing technology
- Zero Cross turn-on technology extends the life of switching relays
- Advanced sensing enhances detection when the room is occupied and minimizes false triggers when unoccupied
- User adjustable settings are easy to program by pressing sensor's push pad, no tools required
- Operating Modes for bath fan, air cycle and humidistat
- Test mode to help determine proper sensor placement and setting adjustments that need to be made for optimal operation
- Can be used to comply with the requirements of 2022 California Title 24, Part 6, Indoor Air Quality and Mechanical Ventilation
- Can be used to comply with the requirements of 2022 CALGREEN, Part II, Indoor Air Quality and exhaust
- Meets requirements of ASHRAE 62.2
- Compatible with Decora and Decora Plus™ wallplates
- Color change kits available

## Decora Residential Grade Wall Switch Humidity Sensor and Fan Control

| Description | Cat. No. | Color* | Rating |
|---|---|---|---|
| Humidity Sensor & Fan Control, Single Pole | DHS05-IL | W, I,T | 300W LED/CFL<br>600W Inc/Halogen<br>400VA ELV/MLV<br>1/4 HP Motor |

## Color Change Kits

| Description | Cat No. | Color |
|---|---|---|
| Color Change Kits for Sensors, no icons | DOSKT-00 | W, I, T, G, E, B |
| Color Change Kits for Combination Sensors, no icons | DHDKT-00 | |

To order colors, add suffix to basic Cat. No. Products with suffix Z include White, Ivory, and Light Almond.
Color change kits available in the following colors: White (-W), Ivory (-I), Light Almond (-T), Gray (-G), Black (-E), and Brown (-B)

DHS05

# Decora Commercial Wall Switch Infrared Occupancy and Vacancy Sensors

## Features and Benefits

**All ODS Wall Switch Sensors**

- Leviton wall switch sensors are designed for operation in a variety of voltages, reducing the need for additional SKUs
- Photocell with ambient light override prevents these devices from switching lights ON when there is ample natural sunlight
- Push-button manual override is used to turn lights ON at any time, regardless of the override setting
- 180° field of view, 2100 sq. ft. of coverage
- One unit can be used for 120V or 277VAC 60Hz LED, incandescent, low voltage and fluorescent lighting with either magnetic or electronic ballasts, and motor loads
- Exclusive dual PIR sensors
- Patented adjustable blinders
- Vandal-resistant Fresnel lens
- Fits in standard wallbox; gangable
- Elegant Decora wallplate
- Vacancy sensors feature auto-OFF switching on vacancy after manual-ON switch
- Can be used to comply with IECC, ASHRAE 90.1, NYC L48, 2022 Title 24, Part 6 occupancy sensing requirements
- Auto-ON/Auto-OFF only sensors prevent an occupant from being able to turn the lights OFF
- Lev-Lok® sensors combine the energy savings of wall switch sensors and time saving Lev-Lok wiring technology
- Backed by a limited 5-year warranty

**ODS10-ID PIR Occupancy Sensor**

- For use in enclosed offices, storage rooms, copier rooms and closets
- Delayed-OFF time settings: 10, 20 and 30 minutes with 30 second test mode

**ODS06-ID PIR Occupancy Sensor**

- For use in small offices, conference rooms and lounges
- Delayed -OFF time settings: 10, 20 and 30 minutes with 30 second test mode

**Dual-Relay PIR Occupancy Sensors**

- Ideal for classrooms, multimedia and conference rooms, day care centers, offices, and lounges
- Exclusive automatic “walk-through” sensing
- Provides automatic switching for 2 separate banks of LED, fluorescent, incandescent or low-voltage lighting from a single unit
- Delayed-OFF time interval (10, 20 and 30 minutes) compensates for real-time occupancy patterns, preventing unnecessary ON/OFF switching — with 30 second test mode
- Backed by a limited 5-year warranty

## Commercial Grade Decora Wall Switch Infrared Occupancy and Vacancy Sensors*

| Description | Cat. No. | Color | Rating | Coverage |
|---|---|---|---|---|
| Decora Wall Switch PIR Occupancy Sensor | ODS06-ID | W, I | Incandescent: 600W @ 120V. LED Fluorescent: 800VA @ 120V, 1500VA @ 277V. 50/60Hz. Motor: 1/4 HP @ 120V | 180°, 2100SF |
| Decora Wall Switch PIR Occupancy Sensor | ODS06-IN | | | |
| Decora Wall Switch PIR Occupancy Sensor 347V Only Model | ODS10-I3 | W | Incandescent: 3470W @ 347V. LED Fluorescent: 3470W @ 347V. 50/60/Hz. Motor: 1/4HP @ 347V | |
| Decora Wall Switch PIR Occupancy Sensor | ODS10-ID | W, I, T, G, E, R | Incandescent: 800W @ 120V. LED Fluorescent: 1200VA @ 120V, 2700VA @ 277V. For 60Hz AC only. Motor: 1/4HP @ 120V | |
| Decora Dual-Relay Wall Switch PIR Occupancy Sensor with Self-Adaptive Technology Default setting = Conference Room Mode*** Alternate setting = Classroom mode*** | ODS0D-ID | W, I, T, G, E, R | Primary Relay — LED Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Incandescent: 800W @ 120V. Secondary Relay — LED Fluorescent: 800VA @ 120V, 1200VA @ 277V. Incandescent: 800W @ 120V. 50/60Hz | |
| Protective Cage for Wall Switch Sensors | OSWWG-P0W | W | — | — |

*Consult with factory for 208, 220, 230, and 240V models.
**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:** Leviton sensors meet the following applicable agency listings: UL, cULus, ETL, CSA and NOM. See product data sheets for specific listings

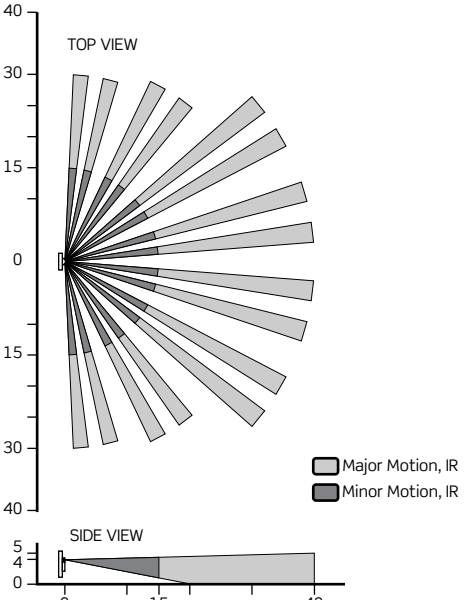
ODS06-INW/ODS06-IDW
ODS10-IDW

ODS0D-IDW

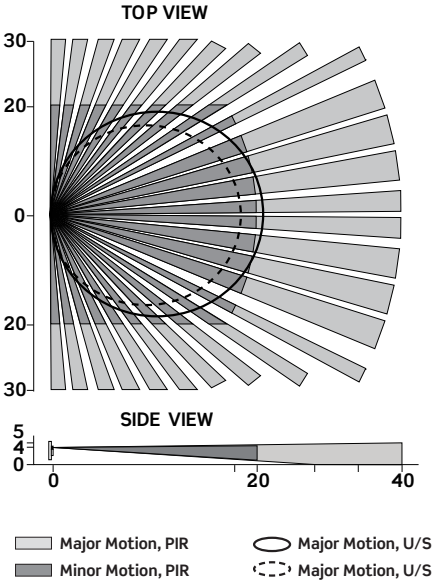
| Lev-Lok® Occupancy Sensor Modules, 20A | | | |
|---|---|---|---|
| **Description** | **Cat. No.** | **Color** | **Rating** |
| Decora Wall Switch PIR Occupancy Sensor - Lev-Lok Model | MDS10-ID | W, I, T, G, E | Incandescent: 800W @ 120V<br>Fluorescent: 120VA @120V, 2700VA @ 277V<br>50/60Hz Motor: 1/4HP @ 120V |
| Decora Wall Switch PIR Occupancy Sensor - Lev-Lok Model | MSPSW-XSD | | |
| Decora Wall Switch Multi Technology Occupancy Sensor with No Neutral - Lev-Lok Model | MSSMT-GD | | Incandescent/Tungsten: 800W @ 120V<br>Fluorescent: 1200VA @ 120V, 2700VA @ 277V 60Hz Motor: 1/4HP @ 120V |

| Lev-Lok® Occupancy Sensor Modules, 20A, 347V | | |
|---|---|---|
| **Description** | **Cat. No.** | **Color** |
| Stranded | MSPSW-XSWT | Yellow |
| Solid | MSPSW-XSD | |

## Field of View, in feet




ODSXX




Mxxxx

# Decora Commercial Wall Switch Multi-Technology Occupancy and Vacancy Sensors

Convenient switch and occupancy sensor combo in a sleek Decora unit. Advanced passive infrared technology provides highly accurate monitoring in a variety of commercial applications. The OSSMD and OSSMT combine passive infrared and ultrasonic technologies to provide maximum sensitivity with immunity to false triggering.

## Features and Benefits

**OSSMT-MD, OSSMT-GD, OSSMD-MA, OSSMD-GA**

- OSSMT ideal for private and executive offices, conference ooms, storage areas, restrooms, classrooms, lounges, and training areas, or areas where minor motion is likely to occur
- OSSMD ideal for bi-level offices, partitioned areas and restrooms or other areas where minor motion is likely to occur
- Photocell with ambient light override prevents lights from turning on when there is ample natural light
- Manual override turns lights on at any time regardless of override setting
- Exclusive automatic "walk-through" sensing increases energy savings by shutting lights OFF within 2 1/2 minutes after momentary occupancy
- Manual delayed-off-time settings (10, 20, and 30 minutes) compensate for real-time occupancy patterns, preventing unnecessary ON/OFF switching — with 30 second test mode
- Single-pole and 3-way wiring
- Adjustable integral blinders with 180° to 32° field-of-view
- Can be used to comply with IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 Manual ON/Auto OFF requirements
- Backed by a limited 5-year warranty

## Commercial Grade Wall Switch Multi-Technology (PIR & US) Occupancy and Vacancy Sensors*

| Description | Cat. No. | Color | Rating | Coverage |
|---|---|---|---|---|
| Decora Wall Switch Multi-Technology Occupancy Sensor with Self-Adaptive Technology | OSSMT-MD | W, I, T, G, E, R | Incandescent/Tungsten: 800W @ 120VFluorescent: 1200VA @ 120V, 2700VA @ 277V Motor: 1/4HP @ 120V50/60Hz | 180°, 2400SF |
| Decora Wall Switch Multi-Technology Vacancy Sensor with Self-Adaptive Technology | OSSMT-TM | I, T | | |
| Decora Wall Switch Multi-Technology Occupancy Sensor with Self-Adaptive Technology - 347V Only Model | OSSMT-M3 | W, I | Incandescent/Tungsten: 800W @ 120VFluorescent: 1200VA @ 120V, 2700VA @ 277V, 1500VA @347VMotor: 1/4HP @ 120V | |
| Decora Wall Switch Multi-Technology Occupancy Sensor with No Neutral | OSSMT-GD | | Incandescent/Tungsten: 800W @ 120V. Fluorescent: 1200VA @ 120V, 2700VA @ 277V. Motor: 1/4HP @ 120V, 50/60Hz | |
| Decora Wall Switch Multi-Technology Vacancy Sensor with No Neutral | OSSMT-GT | W, I, T, G, E, R | | |
| Decora Dual-Relay Wall Switch Multi-Technology Occupancy Sensor | OSSMD-MD | I, T | Primary Relay — Fluorescent 1200VA @ 120V, 2700VA @ 277V Incandescent: 800W @ 120V Secondary Relay — Fluorescent: 800VA @ 120V, 1200VA @ 277V; Incandescent: 800W @ 120V Motor: 1/4HP @ 120V, 50/60Hz | |
| Decora Dual Relay Multi-Tech Wall Switch Occupancy Sensor with -No Neutral | OSSMD-GD | W,I | | |
| Protective Cage for Wall Switch Sensors | OSWWG-P0W | W | — | — |

*Consult with factory for 208, 220, 230, and 240V models.
**Note:** Leviton sensors meet the following applicable agency listings: UL, cULus, ETL, CSA and NOM.
See product data sheets for specific listings

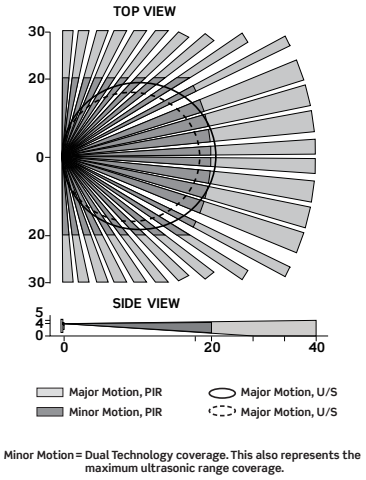
OSSMT-MDT/
OSSMT-GDT

OSSMD-MAW/
OSSMD-GAW

| Commercial Grade Decora Wall Switch Multi-Technology (PIR & US) Occupancy and Vacancy Sensors* | | | | |
|---|---|---|---|---|
| **Description** | **Cat. No.** | **Color** | **Rating** | **Coverage** |
| Decora Dual-Relay Wall Switch Multi-Technology Self-Adaptive Technology | OSSMD-MA | W, I, T, G,E | Primary Relay —LED Fluorescent 1200VA @ 120V, 2700VA @ 277V Incandescent: 800W @ 120V. Secondary Relay —LED Fluorescent: 800VA @ 120V, 1200VA @ 277V Incandescent: 800W @ 120V Motor: 1/4HP @ 120V, 50/60 Hz | 180°, 2400SF |
| Decora Dual-Relay Wall Switch Multi-Technology Occupancy Sensor. No neutral wire required for installation | OSSMD-GA | | | |
| Protective Cage for Ceiling Mount Sensors | OSWWG-P0W | W | — | — |

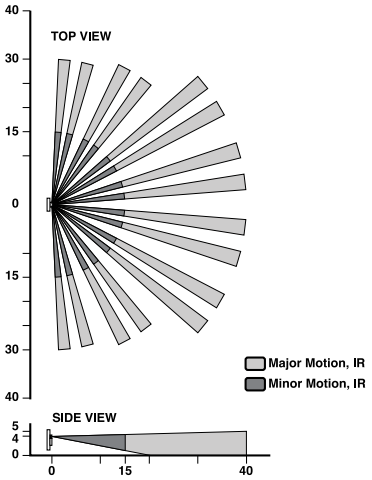
*Consult with factory for 208, 220, 230, and 240V models.
For Lev-Lok Occupancy Sensor wiring modules see ordering information on page 23

## Field of View, in feet




Minor Motion = Dual Technology coverage. This also represents the maximum ultrasonic range coverage.

OSSMD/OSSMT




ODSXX-ID/OSSXX-ID/ODSOD

## Commercial Programmable Indoor Digital Timer

The TS300 provides energy saving control of indoor incandescent and fluorescent lighting as well as motor loads such as fans and circulating pumps. The TS300 uses timed override features to allow lights and HVAC to remain ON for a specified amount of time to accommodate after-hours crews. The aesthetically pleasing timer is easy to install and can replace any wall switch.

### Features and Benefits

- Wallplate locks access to dip switches for tamper resistance
- Backlit LED
- Optional audible blink warning
- No minimum load requirement
- Adjustable time delay and sensitivity
- Dual 120/277 VAC operation
- Can be used to comply with IECC, ASHRAE 90.1, 2022 Title 24, Part 6 occupancy sensing requirements
- UL and cUL listed

TS300

| Programmable Digital Timer | | | |
|---|---|---|---|
| **Description** | **Cat. No.** | **Color** | **Rating** |
| Programmable Digital Indoor Timer, wallplate included | TS300-0DW | W | 120VAC, 15A Resistive, 10A Ballast, 1200W LED lamp driver, 8A Tungsten, 1/4 HP Motor, 360VA Pilot duty 277VAC, 15A Resistive, 10A Ballast |

# Provolt™ Self-Contained Sensors - Daylight Harvesting Capable Models

The Leviton Provolt™ series of occupancy and vacancy sensors simplifies advanced lighting controls by integrating several control strategies into a compact, self-contained and easy-to-install device. The integrated design alleviates the need for separate power pack, occupancy/vacancy sensor and photocell wiring, making it a low-cost and efficient energy management solution for new construction and retrofits. For true Daylight Harvesting applications, integrated photocells provide consistent Daylight Design Levels by actively switching the connected load(s) ON and OFF in response to available natural light to maximize energy savings.

## Features and Benefits

- Includes occupancy/vacancy sensing, daylight harvesting, and manual-ON/auto-OFF override control in a single unit
- Provides additional energy savings with Ambient Light Override
  - Occupancy/vacancy sensor models include an angled light pipe and flat light pipe for open loop and closed loop daylight harvesting applications
  - Auto-Calibration - photocell intelligently measures light levels to determine optimal daylight design levels for closed loop applications and provides ambient light override capability
- Switching Control Designed for LED Drivers
- Models include single or dual relay
- Dual relay modes include: auto-ON/auto-OFF, manual ON/auto-OFF, auto-ON/manual-ON, fan control, stairwell control, step dimming — alternating daylighting levels, step dimming — load 1 primary
- Auto-adapting — time delay and sensitivity are continually adjusted to room occupancy pattern
- Output short circuit protection — protection against low voltage wiring errors
- BMS input/emergency override
- Industry-exclusive self-configuring local manual switch input supports momentary and maintained switches — no special control stations required
- Industry-exclusive “fail-safe” circuitry assures lights ON to meet life safety requirements
- Industry-exclusive High Inrush Stability (H.I.S.) technology for unmatched durability and service
- Mechanically held 10A latching relay provides dependability and robust performance for all load types
- Zero-crossing circuitry for extended life of the relay
- Simplified commissioning
- Visual LED status indicators
- Easily replaceable lenses are color-coded for contractors and end-users to identify from the ground:
- Integrated photocell tested to less than 1fc accuracy
- Tested to exceed 2 million switching cycles under standard loads
- Passed rigorous NEMA 410 testing for electronic ballast rating
- Can be used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6 requirements for occupancy/vacancy sensing, UL 773A (Occupancy Standard), UL 924 (Emergency Equipment), cUL Listed, CE, NOM Certified, RoHS, and NY LLC48 Compliant

## Provolt Self-Contained Ceiling Mount Occupancy Sensors — Daylight Harvesting Capable

| Description | Cat. No. | Coverage | Color | Input Voltage, Rating |
|---|---|---|---|---|
| Provolt Line Voltage Ceiling Mount PIR Occupancy Sensor w/Integrated Photocell, High-Density Lens Installed, Mid-Range Lens included | ODC04-IDW | 450SF | W | 120V, 50/60Hz,8A, Electronic Ballast, 800W/VA, Tungsten Ballast, 1/4 HP Motor |
| Provolt Line Voltage Ceiling Mount PIR Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range Lens Included | ODC15-IDW | 1500SF | | 230V, 50Hz 6A/6AX, Electronic Ballast, Magnetic Ballast, 1200W/VA, 1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount U/S Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | ODC05-UDW | 500SF | | 120V, 50/60Hz 8A Electronic Ballast, 800W/VA, Tungsten Ballast, Mid-Range Lens included 1/4 HP Motor |
| Provolt Line Voltage Ceiling Mount U/S Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | ODC10-UDW | 1000SF | | 230V, 50Hz 6A/6AX, Electronic Ballast, 1200VA, 1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount U/S Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | ODC20-UDW | 2000SF | | 277V, 50/60Hz 5A, Electronic Ballast, 1200W/VA, Tungsten Ballast, 1/3 HP Motor |

## Provolt Self-Contained Ceiling Mount Occupancy Sensors — Daylight Harvesting Capable

| Description | Cat. No. | Coverage | Color | Input Voltage, Rating |
|---|---|---|---|---|
| Provolt Line Voltage Ceiling Mount Multi-Technology Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | ODC05-MDW | 500SF | W | 230V, 50Hz<br>6A/6AX, Electronic Ballast,<br>Magnetic Ballast, 1200W/VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range Lens included | ODC10-MDW | 1000SF | | 277V, 50/60Hz<br>5A, Electronic Ballast,<br>1200VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range Lens included | ODC20-MDW | 2000SF | | |

## Provolt Self-Contained Ceiling Mount Occupancy Sensors — Daylight Harvesting Capable

| Description | Cat. No. | Coverage | Color | Input Voltage, Rating |
|---|---|---|---|---|
| Provolt Line Voltage Ceiling Mount PIR Dual Relay Occupancy Sensor w/Integrated Photocell, High-Density Lens installed, Mid-Range Included | O2C04-IDW | 450SF | W | 120V, 50/60Hz<br>8A, Electronic Ballast,<br>800W/VA, Tungsten Ballast,<br>1/4 HP Motor |
| Provolt Line Voltage Ceiling Mount PIR Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range included | O2C15-IDW | 1500SF | | |
| Provolt Line Voltage Ceiling Mount U/S Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | O2C05-UDW | 500SF | | |
| Provolt Line Voltage Ceiling Mount U/S Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | O2C10-UDW | 1000SF | | 230V, 50Hz<br>6A/6AX, Electronic Ballast,<br>Magnetic Ballast, 1200W/VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount U/S Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | O2C20-UDW | 2000SF | | |
| Provolt Line Voltage Ceiling Mount Multi-Technology Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed | O2C05-MDW | 500SF | | 277V, 50/60Hz<br>5A, Electronic Ballast,<br>1200VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range included | O2C10-MDW | 1000SF | | |
| Provolt Line Voltage Ceiling Mount Multi-Technology Dual Relay Occupancy Sensor w/Integrated Photocell, Extended Range Lens installed, Mid-Range included | O2C20-MDW | 2000SF | | |

## Provolt Self-Contained Ceiling Mount Vacancy Sesnors

| Description | Cat. No. | Coverage | Color | Input Voltage, Rating |
|---|---|---|---|---|
| Provolt Line Voltage Ceiling Mount PIR Vacancy Sensor | O3C15-IDW | 1500SF | W | 120V, 50/60Hz<br>8A, Electronic Ballast,<br>800W/VA, Tungsten Ballast,<br>1/4 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Vacancy Sensor | O3C10-MDW | 1000SF | | 230V, 50Hz<br>6A/6AX, Electronic Ballast,<br>Magnetic Ballast, 1200W/VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Vacancy Sensor | O3C20-MDW | 2000SF | | 277V, 50/60Hz<br>5A, Electronic Ballast, 1200V<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount PIR Dual Relay Vacancy Sensor | O4C15-ODW | 1500SF | | 230V, 50Hz<br>6A/6AX, Electronic Ballast,<br>Magnetic Ballast, 1200W/VA,<br>1/3 HP Motor |
| Provolt Line Voltage Ceiling Mount Multi-Technology Dual Relay Vacancy Sensor | O4C10-MDW | 1000SF | | |
| Provolt Line Voltage Ceiling Mount Multi-Technology Dual Relay Vacancy Sensor | O4C20-MDW | 2000SF | | 277V, 50/60Hz<br>5A, Electronic Ballast, 1200V<br>1/3 HP Motor |

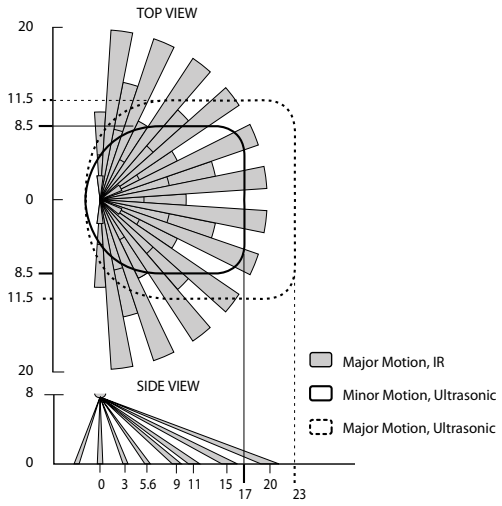
## Provolt Self-Contained Sensors—Daylight Harvesting Capable Models

ODC20-MDW

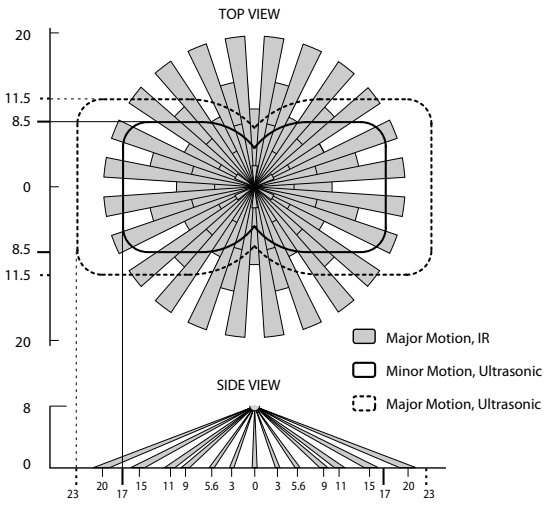
ODC20-MDW (top view)


O3C20-MDW

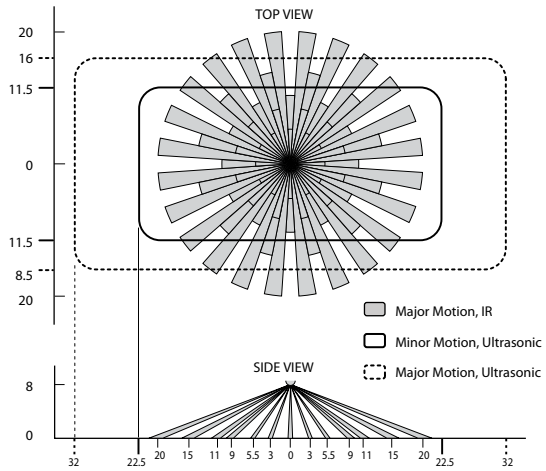
## Field-of-View, In Feet—Provolt Self-Contained Ceiling Mount Multi-Tech



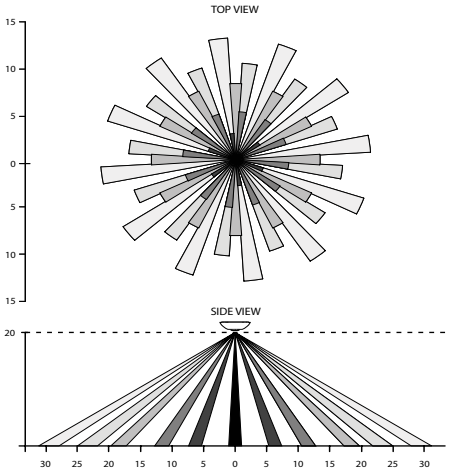

ODC05-MDW (High Density: Blue Lens),
O2C05-MDW




ODC10-MDW, O3C10-MDW, O2C10-MDW
(Extended Range: Black Lens), O4C10-MDW

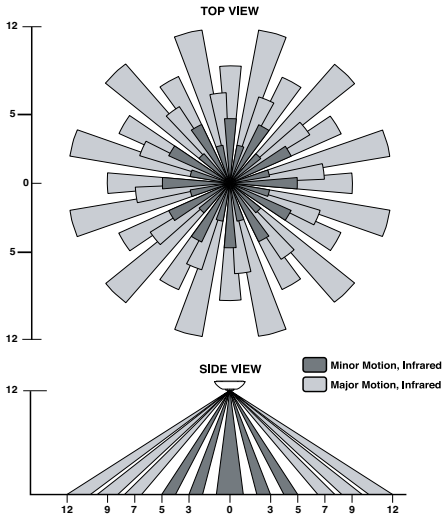



ODC20-MDW, O3C20-MDW,
O2C20-MDW, O4C20-MDW

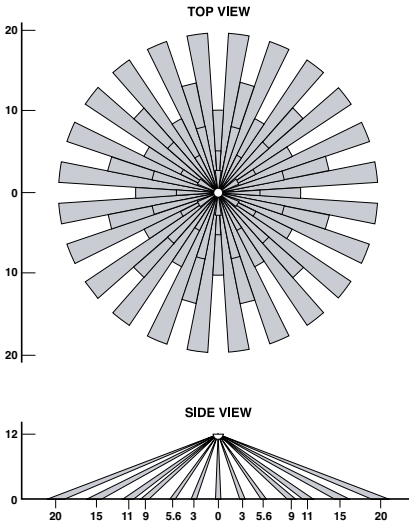



Multi-Range Lens — Mounting up to 20 feet
(Included with all PIR and Multi-Tech Models)

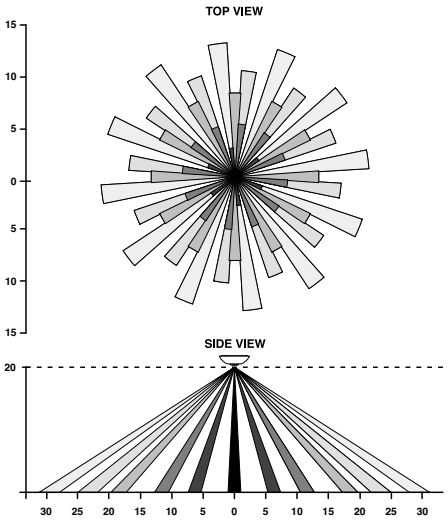
## Field-of-View, In Feet—Provolt Self-Contained Ceiling Mount PIR Sensors




ODC04-IDW
(High Density: Blue Lens), O2C04-IDW

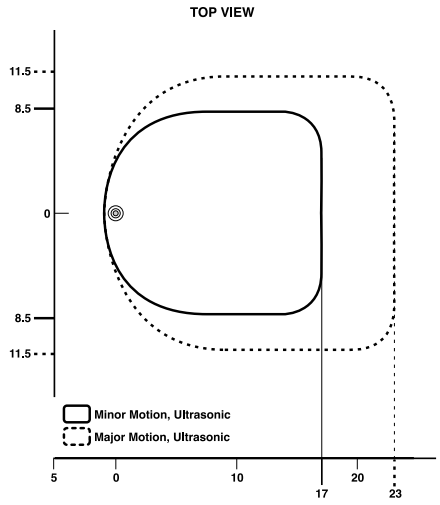



ODC15-IDW, O3C15-IDW,
O2C15-IDW (Extended Range:
Black Lens), O4C15-IDW

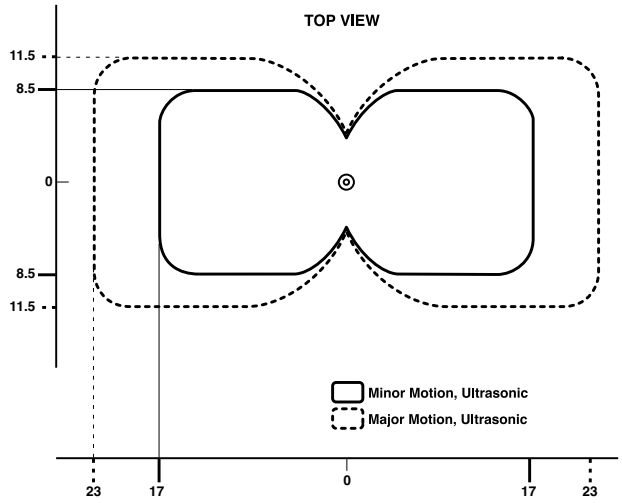



Mid-Range Lens — Mounting up to
20 feet (Included with all PIR
and Multi-Tech Models)

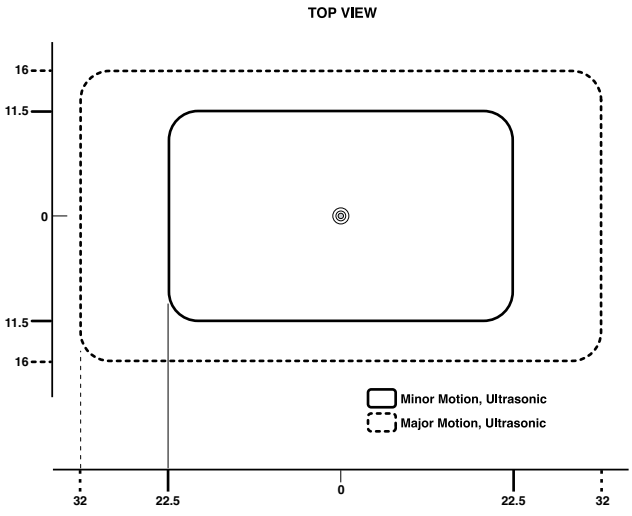
## Field-of-View, In Feet—Provolt Self-Contained Ceiling Mount U/S Sensors




ODC05-UDW, O2C05-UDW




ODC10-UDW, O2C10-UDW




ODC20-UDW, O2C20-UDW

# Line Voltage Occupancy/Vacancy Sensors

## Self-Contained Infrared Ceiling Mount Occupancy Sensors

PIR Occupancy Sensor with built-in relay—separate power pack not required.

### Features and Benefits

- Sensor and switching relay combined in a single, self-contained unit — no control unit (power pack) required
- Switching control of LED drivers
- 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 Adapter 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

### Self-Contained Infrared Ceiling Mount Occupancy Sensors

| Description | Cat. No. | Color | Rating | Coverage |
|---|---|---|---|---|
| Self-Contained PIR Ceiling Mount Occupancy Sensor and Switching Relay, 120V | ODC0S-I1W | W | Incandescent: 1000W @ 120V<br>LED Fluorescent: 100VA @ 120V<br>Motor: 1HP @ 120V, 50/60 Hz | 360°, 530SF* |
| Self-Contained PIR Ceiling Mount Occupancy Sensor and Switching Relay, 220V | ODC0S-I2W | | Incandescent: 1000W @ 220V<br>LED Fluorescent: 500VA @ 220V<br>For 50Hz AC only | |
| Self-Contained PIR Ceiling Mount Occupancy Sensor and Switching Relay, 277V | ODC0S-I7W | | LED Fluorescent: 2700VA @ 220V<br>50/60 Hz | |
| Protective Cage for Ceiling Mount Sensors | ODCCG-000 | — | — | — |

*When surface mounted on standard 8 foot ceiling

ODC0S-I1W

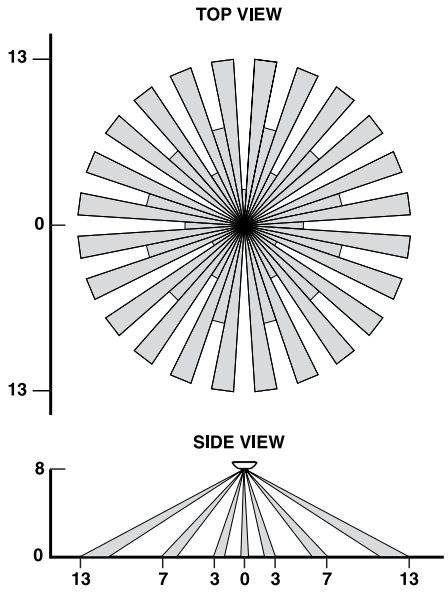
ODCCG-000

### Line Voltage Sensors with OPB15 Power Base Adapter Combos

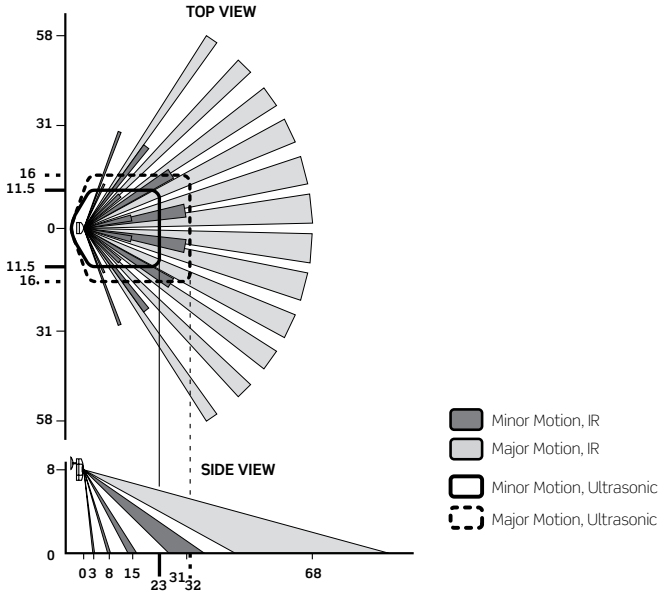
| Description | Cat. No. | Color | Input Voltage, Rating | Coverage |
|---|---|---|---|---|
| Line Voltage Wall Mount Multi-Technology Occupancy Sensor with Power Base Combo | ODW12-MDW | W | 15A Incandescent, Electronic or Magnetic Fluorescent Ballast.<br>Motor: 3/4 HP @ 120V, 277V @ 2HP | 1200SF |
| Line Voltage Wall Mount PIR Wide View Occupancy Sensor with Power Base Combo | ODWWV-IDW | | | 115°, 2500SF |
| Line Voltage Wall Mount PIR Wide View Occupancy Sensor with Power Base Combo | ODWHB-IDW | | | 55ft., 7ft. side @ 30ft. high |
| Line Voltage Wall Mount PIR Long Range Occupancy Sensor with Power Base Combo | ODWLR-IDW | | | 100ft., 110° @ 10ft. high |

ODW12

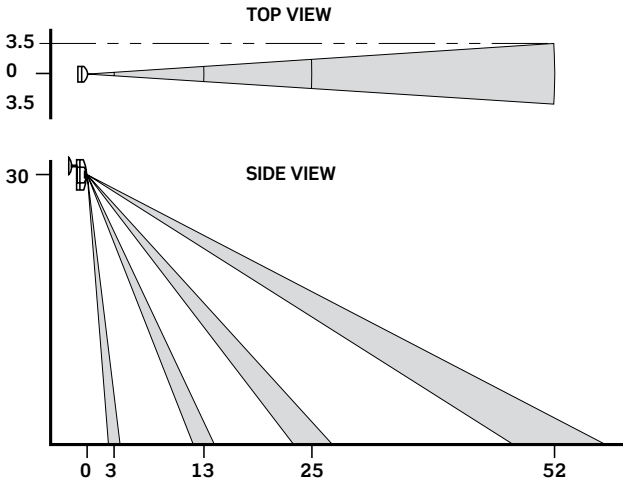
## Field of View, in feet



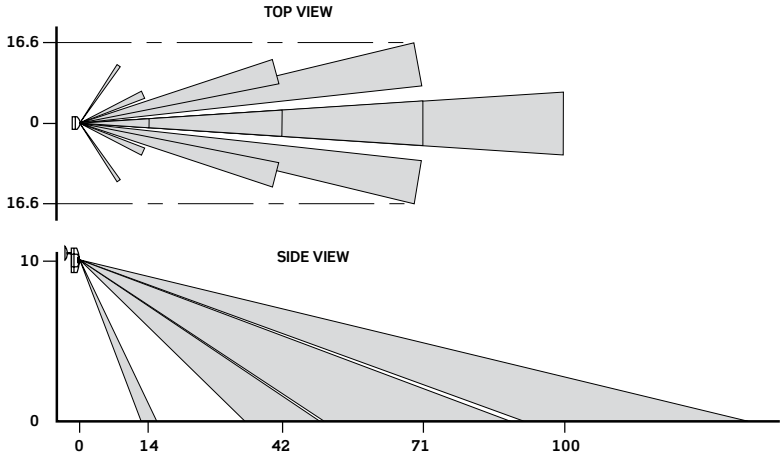

ODC0S-I




ODWWV




ODWHB




ODWLR

# Self-Contained PIR Fixture Mount High-Bay & Integral Luminaire Occupancy Sensors

## Features and Benefits

**PIR Fixture Mount High Bay Occupancy Sensor**

- Universal unit includes two interchangeable lenses for 360° high bay and 360° low bay at no additional cost
- Cold storage models for applications as low as -40°F and 480V models available in non-neutral versions
- Switching control of LED drivers
- Mounts directly to industrial-style fluorescent luminaire or electrical junction box
- Self-contained PIR sensor and relay turn individual fixtures ON/OFF based on occupancy
- Up to 40ft 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 30sec to 20min
- Offset Adapter Accessory snaps into 1/2" knockout to position sensor below fixture body for improved field of view with deep-body fixtures

**PIR Fixture Mount High/Low-Bay Dimming Occupancy Sensor**

- Dimming occupancy sensor with integrated photocell contains two interchangeable 360° high bay and 360° low bay lenses at no additional cost
- Cold storage models for applications as low as -40°F and 347V models available
- Up to 40ft mounting height with 21" wire leads

**PIR Fixture Mount High-Bay Wet Location Occupancy Sensor**

- Ideal for damp or wet wash down locations
- Occupancy sensor comes with two interchangeable lenses for use in either 360° high bay and 360° low bay general area and includes an aisle mask accessory at no additional cost
- Up to 40ft mounting height with 7.5" wire leads

**PIR Fixture Mount Integral Luminaire Occupancy Sensor**

- Easy installation with longer 21" 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

**Fixture Mount Microwave High Bay 0-10V Sensor**

- Tri-level dimming control
- Programmable dim-to-min levels and time outs
- Specifically designed for LED fixture control
- Suitable for use in standard and cold storage applications

## Self-Contained Infrared High Bay Occupancy Sensors*

### Coverage

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.

| Description | Rating | Models | Cat. No. |
|---|---|---|---|
| Fixture Mount High-Bay PIR Occupancy Sensor with Two Interchangeable Lenses, for 360° High-Bay and 360° Low-Bay | Fluorescent: 800VA @ 120V, Fluorescent: 1200VA @ 277V, Fluorescent: 1500VA @ 347V, 2400VA @ 480V 50/60Hz (OSFHU-x4W models only) Motor: 1/4 HP @ 120V | 120-230-277-347V | OSFHU-ITW |
| | | 120-230-277-347V, Cold Storage | OSFHU-CTW |
| | | 240/480V | OSFHU-I4W |
| | | 240/480V, Cold Storage | OSFHU-C4W |
| Fixture Mount High-Bay PIR Sensor with Interchangeable Lenses and Light Sensor, Low Voltage | Input: 20mA Output: 120mA HVAC: 1A, 30VDC | 24V | OSFHP-ILW |

*Consult with factory for 208, 220, 230, and 240V models

## Self-Contained Infrared High Bay Occupancy Sensors*

### Coverage

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.

| Description | Rating | Models | Cat. No. |
|---|---|---|---|
| Surface Mount High-Bay PIR Occupancy Sensor | Fluorescent: 800VA @120VAC<br>Fluorescent: 1200VA @ 277VAC<br>Fluorescent: 1500VA @ 347VAC<br>Motor: 1/4 HP @120V | — | OSFHS-ITW |
| Fixture Mount High-Bay PIR Wet Location Sensor with Two Interchangeable Lenses | Fluorescent: 800VA @120VAC<br>Fluorescent: 1200VA @ 277VAC<br>Fluorescent: 1500VA @ 347VAC<br>Motor: 1/4 HP @120V | 120-277-347V | OSFHW-CTW |
| Fixture Mount High/Low-Bay PIR Sensor with Two Interchangeable Lenses | Fluorescent: 800VA @ 120VAC<br>Fluorescent: 1200VA @ 277VAC<br>Motor: 1/4 HP @120VAC | 120-277V | HB011-PDX (21" Leads)<br>HB011-BDX (42" Leads) |
| | | 347V | HB011-PD2 (21" Leads)<br>HB011-BD2 (42" Leads) |
| Fixture Mount Microwave High Bay 0-10V Sensor | Resistive/Halogen: 800W@120V<br>1200W@277V<br>Fluorescent Ballast: 660W@120V<br>1200W@277V<br>Electronic Ballast: 800W @ 120VAC LED, CEL,<br>1200W@ 211VAC LED, CEL<br>Magnetic Ballast: 660W @ 120VAC<br>1200W @ 277VAC | 120/277VAC | OSMHB-VDW |

*Consult with factory for 208, 220, 230, and 240V models.
**Order lenses separately

OSFHU-ITW

OSFHW

OSFHP

HB011

OSMHB

OSFHS

# Self-Contained Infrared High Bay and Integral Luminaire Occupancy Sensors

## Self-Contained Infrared High Bay Occupancy Sensors*

### Coverage

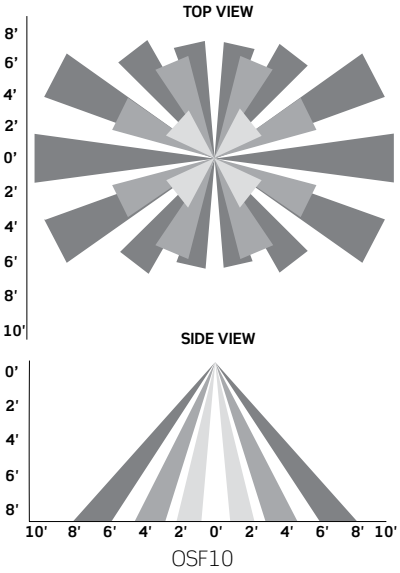
360° — 1:1 spacing to mounting height up to 8 ft.

| Description | Rating | Models | Cat. No. |
|---|---|---|---|
| Fixture Mount Integral Luminaire PIR Occupancy Sensor | Incandescent: 598W @ 120V.<br>Fluorescent: 1000VA @ 230VAC,<br>Fluorescent: 1200VA @ 277VAC | 120-230-277V (Integrated Unit) | OSF10-I0W |
| | | 120-230-277V, Power Pack | OSF10-PPW |
| | | 36" Connection Cable | OSFCA-36W |
| Fixture Mount PIR Outdoor Luminaire Occupancy Sensor with 360 degree high bay lens (8-40') and aisle mask | Fluorescent: 800VA @120VAC<br>Fluorescent: 1200VA @ 277VAC<br>Incandescent: 800W @ 120V<br>Motor: 1/4 HP @120V | 120-230-277-347V | OSF20-IUW |

OSF10-I0W and OSF10-PPW

OSF20

## Field of View, in feet




OSF10

## Self-Contained Infrared High Bay Occupancy Sensor Accessories

| Description | Cat. No. |
|---|---|
| High Bay Lenses for High-Bay Sensors | OSFLN-00W |
| Low Bay Lenses for High-Bay Sensors | OSFLN-00B |
| Aisle Lens for High-Bay Sensors | OSFLN-00E |
| Offset Adapter Accessory for Fixture-Mount Occupancy Sensor | OSFOA-00W |
| Offset Adapter Accessory for High-Bay Occupancy Sensor | OSFLO-00W |
| Protective Cage for High-Bay Mount Sensors | OSFCG-00W |

OSFOA

# Low Voltage Occupancy Sensors

## Ceiling Mount Multi-Technology 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.

### Features and Benefits

**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 by 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

### Ceiling Mount Multi-Technology Occupancy Sensors and Accessories

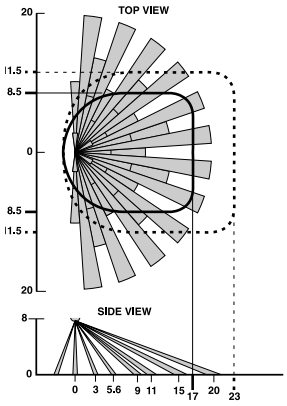
| Description | Cat. No. | Rating | Coverage | Color |
|---|---|---|---|---|
| Multi-Tech Ceiling Mount Occupancy Sensor | OSC05-M0W | 40kHZ | 180°, 500SF | Off-White |
| Multi-Tech Ceiling Mount Occupancy Sensor | OSC10-M0W | | 360°, 1000SF | |
| Multi-Tech Ceiling Mount Occupancy Sensor | OSC20-M0W | 32kHz | | |
| Multi-Tech Ceiling Mount Occupancy Sensor with Isolated Relay | OSC05-RMW | 40kHZ | 180°, 500SF | White |
| Multi-Tech Ceiling Mount Occupancy Sensor with Isolated Relay | OSC10-RMW | | 360°, 2000SF | |
| Multi-Tech Ceiling Mount Occupancy Sensor with Isolated Relay | OSC20-RMW | 32kHz | | |
| Power Base Adapter | OPB15-0DW | — | — | Off-White |
| Cosmetic Adapter | OPBCA-00W | — | — | |
| Protective Cage for Ceiling Mount Sensors | ODCCG-000 | — | — | — |

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

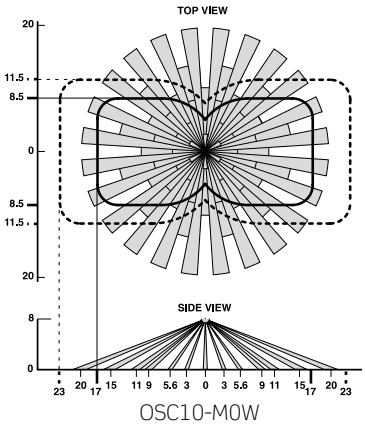
OSC05-M0W

OSC20-M0W

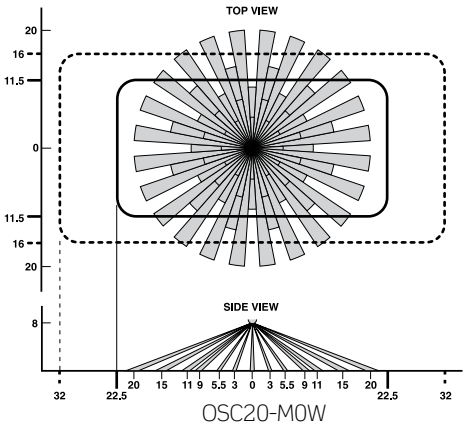
### Field of View, in feet




OSC05-M0W




OSC10-M0W




OSC20-M0W

## 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.

### Features and Benefits

**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

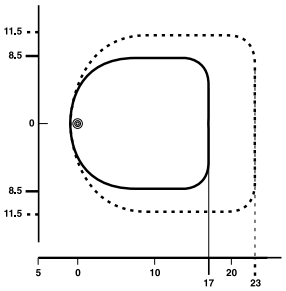
### Ultrasonic Ceiling Mount Occupancy Sensors and Accessories

| Description | Cat. No. | Rating | Coverage | Color |
|---|---|---|---|---|
| U/S Ceiling Mount Occupancy Sensor | OSC05-U0W | 40kHZ | 180°, 500SF | Off-White |
| U/S Ceiling Mount Occupancy Sensor | OSC10-U0W | | 360°, 1000SF | |
| U/S Ceiling Mount Occupancy Sensor | OSC20-U0W | 32kHz | | |
| U/S Ceiling Mount Occupancy Sensor with Isolated Relay | OSC05-RUW | 40kHZ | 180°, 500SF | White |
| U/S Ceiling Mount Occupancy Sensor with Isolated Relay | OSC10-RUW | | 360°, 2000SF | |
| U/S Ceiling Mount Occupancy Sensor with Isolated Relay | OSC20-RUW | 32kHz | | |
| Power Base Adapter | OPB15-0DW | — | — | Off-White |
| Cosmetic Adapter | OPBCA-00W | — | — | |
| Protective Cage for Ceiling Mount Sensors | ODCCG-000 | — | — | — |

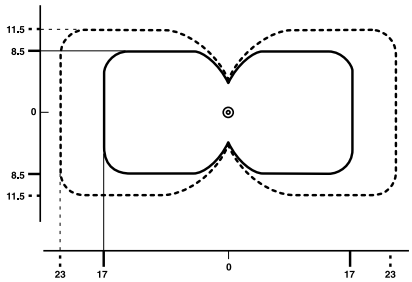
Note: Use low-voltage wiring to connect sensors to OPP20 or OSPxx Power Pack or OPB15 Power Base Adapter

OSC05-U0W

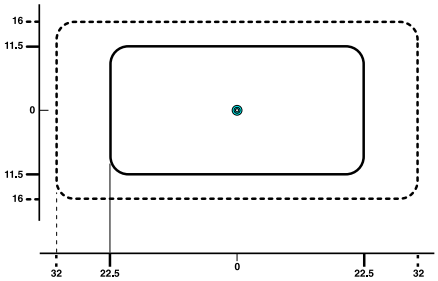
### Field of View, in feet




OSC05-U0W




OSC10-U0W




OSC20-U0W

Minor Motion, Ultrasonic  Major Motion, Ultrasonic

## PIR Ceiling Mount Occupancy Sensors

### Features and Benefits

**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

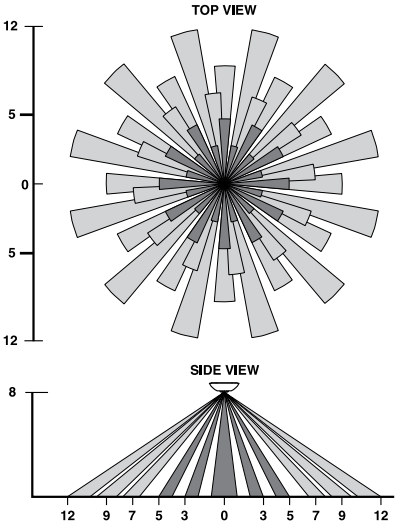
### PIR Ceiling Mount Occupancy Sensors and Accessories

| Description | Cat. No. | Coverage | Color |
|---|---|---|---|
| PIR Ceiling Mount Occupancy Sensor | OSC04-I0W | 360°, 450F | Off-White |
| PIR Ceiling Mount Occupancy Sensor | OSC15-I0W | 360°, 1500F | |
| PIR Ceiling Mount Occupancy Sensor with Isolated Relay | OSC04-RIW | 360°, 450F | |
| PIR Ceiling Mount Occupancy Sensor with Isolated Relay | OSC15-RIW | 360°, 1500F | White |
| Power Base Adapter | OPB15-0DW | — | Off-White |
| Cosmetic Adapter | OPBCA-00W | — | |
| Protective Cage for Ceiling Mount Sensors | ODCCG-000 | — | — |

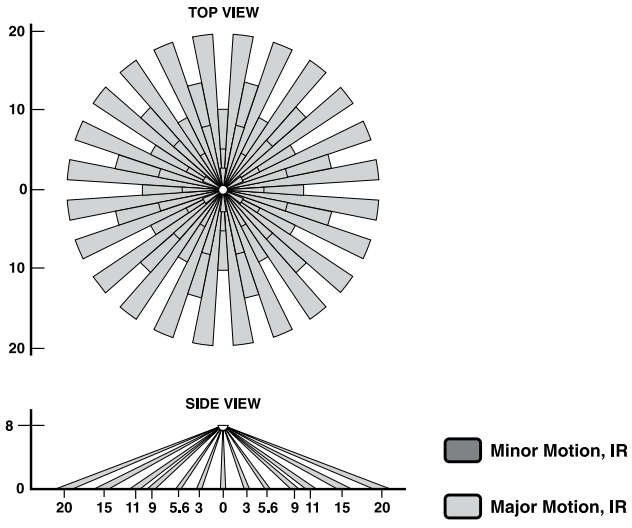
Note: Use low-voltage wiring to connect sensors to OPP20 or OSPxx Power Pack or OPB15 Base Adapter

OSC04-I0W

### Field of View, in feet




OSC04-I0W




OSC15-I0W

## Multi-Technology Wall Mount Occupancy Sensors

Advanced motion sensors combine infrared and ultrasonic technology for highly accurate monitoring without false triggering. Advanced Passive Infrared technology for highly accurate monitoring in a variety of commercial applications. All-digital self-adjusting technology provides “install and forget” solution for automatic lighting control.

### Features and Benefits

- 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

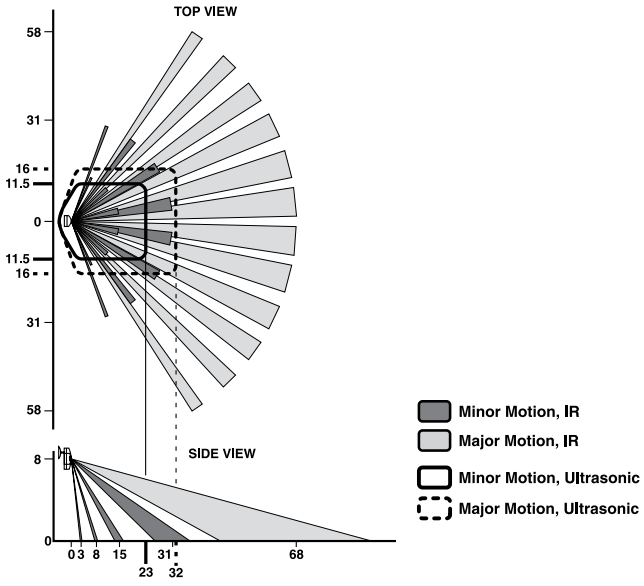
### Multi-Technology Wall Mount Occupancy Sensors and Accessories for use with Leviton Power Pack or Power Base Adapter

| Description | Cat. No. | Coverage | Operational Frequency | Color |
|---|---|---|---|---|
| Multi-Tech Wall Mount Occupancy Sensor | OSW12-M0W | 115°, 1200SF | 32kHz | Off-White |
| Multi-Tech Wall Mount Occupancy Sensor with Isolated Relay | OSW12-RMW | | | White |
| Power Base Adapter | OPB15-0DW | — | — | Off-White |
| Cosmetic Adapter | OPBCA-00W | — | — | |
| Protective Cage for Ceiling Mount Sensors | ODCCG-000 | — | — | White |

Note: Use low-voltage wiring to connect sensors to OPP20 or OSPxx Power Pack or OPB15 Power Base Adapter

OSW12-M0W
Wall Mount

### Field of View, in feet



## 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.

### Features and Benefits

- 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

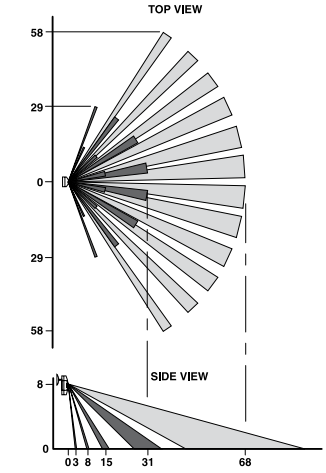
### Infrared Indoor Wall Mount Occupancy Sensors and Accessories for use with Leviton Power Pack or Power Base Adapter

| Description | Cat. No. | Coverage | Color |
|---|---|---|---|
| Wall Mount PIR Wide-View Occupancy Sensor | OSWWW-I0W | 115, 2500SF | Off-White |
| Wall Mount PIR High-Bay Occupancy Sensor | OSWHB-I0W | 55 ft. x 7 ft. wide @ 10 ft. high | |
| Wall Mount PIR Long-Range Occupancy Sensor | OSWLR-I0W | 100 ft. x 14 ft. @ 10 ft. high | |
| Wall Mount PIR Wide-View Occupancy Sensor with Isolated Relay | OSWWV-RIW | 115, 2500SF | White |
| Power Base Adapter | OPB15-0DW | — | Off-White |
| Cosmetic Adapter | OPBCA-00W | — | |
| Protective Cage for Ceiling Mount Sensors | OSWCG-P0W | — | White |

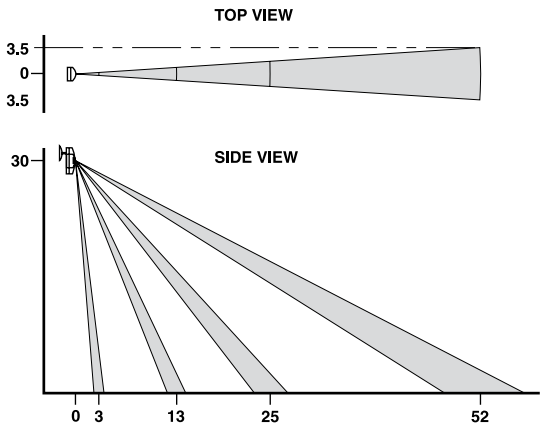
OSWHB-I0W

Note: Use low-voltage wiring to connect sensors to OPP20 or OSPxx Power Pack or OPB15 Power Base Adapter

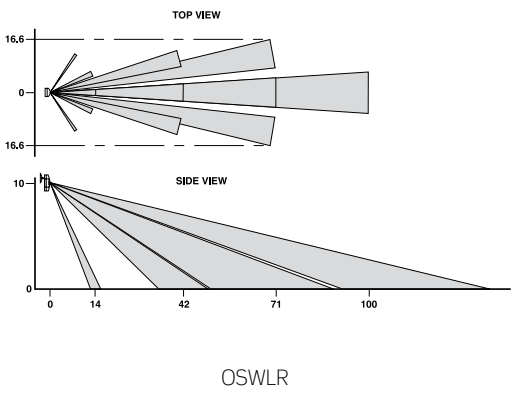
### Field of View, in feet




OSWWV




OSWHB




OSWLR

Minor Motion, IR

Major Motion, IR

Minor Motion, Ultrasonic

Major Motion, Ultrasonic

## High Frequency Occupancy Sensors

The Leviton High Frequency Occupancy Sensors are innovative devices that detect motion through low density materials and can be installed behind fixture lenses, inside lighting fixtures or behind objects made of plastic or glass. The high frequency waves offer less interference and false tripping than traditional sensing technology for reliable occupancy applications.

### Features and Benefits

**High Frequency Sensor (OSM3D-V1W)**

- Automatic switching based on motion and ambient light level
- Zero crossing detection circuitry — protects the sensor against inrush current when switching
- LED lighting compatible
- Detection area, time delay and daylight threshold can be set via sensor DIP switch
- Hold times range from 10 seconds to
- 30 minutes
- 150° wall detection, 360° ceiling detection
- 5.8 GHz high frequency microwave
- 4-pole press-in terminal for easy wiring
- Surface or base mounting — can be hidden from view

**0-10V Dimming High Frequency Sensor (OSM3D-DDW)**

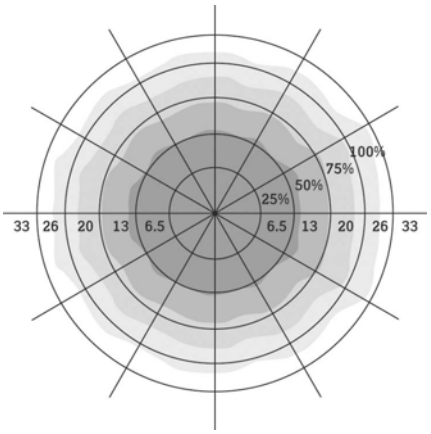
- Automatic switching or dimming
- Built-in daylight sensor
- Designed to detect movement behind low-density fixture materials or behind objects made of plastic or glass
- The sensor's compact size allows it to easily fit in most luminaires
- LED lighting compatible
- Detection area, time delay and daylight threshold can be set via sensor DIP switch
- Wide detection area — range up to 52 feet
- Mounting height up to 49 feet
- Hold times range from 5 seconds to infinity
- 150° wall detection, 360° ceiling detection
- 5.8 GHz high frequency microwave
- Press-in terminal for easy wiring
- Surface or base mounting — can be hidden from view

### High Frequency Occupancy Sensors

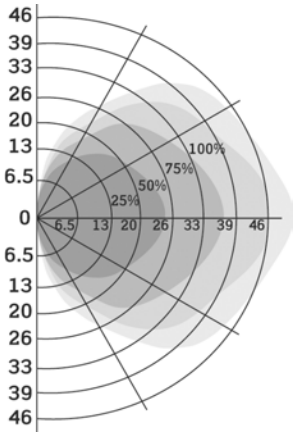
| Description | Cat. No. | Coverage | Color |
|---|---|---|---|
| High Frequency Microwave Sensor | OSM3D-V1W | 150° (wall), 360° (ceiling) | White |
| 0-10V Dimming High Frequency Sensor | OSM3D-DDW | | |

OSM3D

### Field of View, in feet




OSM3D Ceiling Pattern




OSM3D Wall Pattern

# Power Packs and Power Base Adapter

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.

## Features and Benefits

**OPP20 Super Duty Power Pack**

- Robust and reliable mechanically held 20A latching relay provides dependability and robust performance for all load types and provides power savings over electrically held relay power packs
- Industry exclusive fail-safe circuitry — in the event of product failure, Return-to-Closed capability causes relay to default to a closed position (ON) for safe operation and alleviation of safety concerns
- Industry exclusive H.I.S. (High Inrush Stability) circuit designed to handle high inrush electronic ballast loads
- Switching control of LED drivers
- Submitted and passed for stringent testing
  - Tested over 1,500,000 loaded cycles
  - Passed NEMA 410 testing for electronic ballast current overload at 16A
  - Can be used to comply with NY LL48, IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 daylight harvesting, demand response, bi-level switching and receptacle control requirements
  - UL/cUL 916 Listed for Energy Management Equipment
- Multiple compliance and regulatory UL and CSA testing — consult factory for details
- Output short circuit protection
- Optimal installation flexibility
  - Class 2 wires are Teflon coated for UL 2043 Plenum Rated applications
  - Mounts inside or outside fluorescent ballast cavity
  - Mounts inside or outside junction box

**OPP20-0D1**

- Auto-ON occupancy sensor input

**OPP20-0D2**

- Exclusive self-detect configurable local switch input—momentary or maintained
- Configurable for Auto-ON and Manual-ON occupancy sensor inputs
- Can be used to comply with NY LL48, IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 daylight harvesting, demand response, bi-level switching and receptacle control requirements

**OPP20-RD3**

- Auto-ON occupancy sensor input
- Photocell (switching only) ready

**OPP20-RD4**

- Exclusive self-detect configurable local switch input — momentary or maintained
- Configurable for Auto-ON and Manual-ON occupancy sensor inputs
- Photocell (switching only) ready
- Can be used to comply with NY LL48, IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 daylight harvesting, demand response, bi-level switching and receptacle control requirements

**OSP20-RDH Power Pack**

- 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

## Commercial Grade Occupancy Sensor Power Packs

**Occupancy Sensor Power Packs**

| Description | Cat. No. | Power Input* | Relay Rating | Control Input | Power Supply Output |
|---|---|---|---|---|---|
| Power pack, basic with Auto-ON | OPP20-0D1 | 120-230-277VAC, 50/60 Hz | 20A, 2400W @ 120V — Resistive<br>20A, 2400W @ 120V — General Purpose<br>20A, 2400W @ 120V — Incandescent<br>20A, 2400W @ 120V — Fluorescent<br>16A, 1920VA @ 120V — Electronic Ballasts<br>16A, 1920W @ 120V — LED<br>20A, 5540W @ 277V — Resistive<br>20A, 5540W @ 277V — General Purpose<br>20A, 5540VA @ 277V — Fluorescent<br>16A, 4430VA @ 277V — Electronic Ballasts<br>16A, 4430W @ 277V — LED<br>1/2 HP @ 120V — Motor Load<br>2 HP @ 240/277V — Motor Load<br>Suitable for general purpose plug load control - 20A, 2400W @ 120V — Can be used to comply with NY LL48, IE CC, ASHRAE 90.1 and 2022 Title 24, Part 6 daylight harvesting, demand response, bi-level switching and receptacle control requirements | 2mA, 24VDC | 225mA, 24VDC |
| Super Duty Power Pack with Auto-ON, Manual-ON, and Local Switch Inputs, | OPP20-0D2 | | | | |
| Super Duty Power Pack with Auto-ON and Photocell Input | OPP20-RD3 | | | | |
| Super Duty Power Pack with Auto-ON, Manual-ON, Switch, and Photocell Input, suitable for general purpose plug load control | OPP20-RD4* | | | | |

*Consult with factory for 208, 220, and 240V models


OPP20

## Commercial Grade Occupancy Sensor Power Packs

**Occupancy Sensor Power Packs**

| Description | Cat. No. | Power Input* | Relay Rating | Control Input | Power Supply Output |
|---|---|---|---|---|---|
| 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.<br>20A Fluorescent @ 120-230-277/347VAC.<br>1/2HP @ 120V, 2HP @ 240-277V.<br>HVAC: 0.5A @ 120VAC, 1A @ 30VDC | 5mA, 24VDC | 225mA, 24VDC |
| Power Pack with HVAC Relay | OSP15-R30 | 347VAC, 60Hz | 15A Fluorescent @ 347V.<br>1HP @ 120V, 2HP @ 240V.<br>HVAC: 0.5A @ 120VAC, 1A @ 30V DC | | 120mA, 24VDC |
| Add-A-Relay Unit with HVAC Relay | OSA20-R00 | — | 15A Incandescent @ 120V.<br>HVAC: 0.5A @ 125VAC, 1A @ 30VDC | | — |

*Consult with factory for 208, 220, and 240V models
Note: For use with the following Low Voltage Switches:
- 56081-02I/W Low Voltage Momentary Contact Rocker Switch
- 12021-02I /W Low Voltage Standard Toggle Switch
- 56021-02I /W Low Voltage Rocker Switch


OSP20

## Power Packs and Power Base Adapter and Accessories

### 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:

| 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 |

**Number of Model A sensors X Sensor A current consumption rating** + **Number of Model B sensors X Sensor B current consumption rating** + **Number of Add-A-Relays X 50mA** **‹ 225mA**

## Self-Contained Power Base Adapter

Converts any Leviton low voltage ceiling or wall mount occupancy sensor to a self-contained, line voltage unit with 15A, 120/277V load capacity.

### Features and Benefits

- 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 construction with line-voltage circuiting only
- Mounts easily in standard 2 1/8" deep x 4" octagon or 2 1/8" 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

### Power Base Adapter*

| Description | Cat. No. | Power Input/Output | Rating | Color |
|---|---|---|---|---|
| Power Base Adapter—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<br>Control Input: 24VDC, 5mA<br>Power Output: 120VAC @ 15A Incandescent; 277VAC @15A Fluorescent;<br>Motor: 120VAC 3/4 HP, 277VAC 2HP<br>Control Output: 24VDC, 40mA | 15A | Off White |
| Cosmetic Adapter | OPBCA-00W | — | — | |

Agency Listings & Code Compliance: NOM Certified.
Consult with factory for 208, 220, 230 and 240V models.
Note: Coverts OSCxx-I, OSCxx-M and OSCxx-U.
Does not convert OSCxx-

OPB15-0DW (Occupancy Sensor not included)

# Photocells

Leviton's photocell sensors precisely monitor either task or ambient light levels. As part of a Leviton energy management system, photocells work with other components in the system to automatically adjust light levels to a user-defined level. Photocells are most suitable for installation in rooms with windows and open spaces receiving substantial ambient light. Photocells must be hardwired to a compatible Leviton lighting control system. The photocell measures ambient light in a specific area and sends this data to a dimmer or relay that, in turn, adjusts fixtures to a constant lighting level as measured in that specific area. Daylight Harvesting is achieved as lights in a room (with windows or significant, artificial ambient light) automatically brighten or dim depending on how much light the photocell detects.

### Daylight Harvesting

With daylight harvesting, ambient (often natural) light supplements in-room, artificial light in order to keep a constant lighting level while saving energy. This constant level is programmed into a compatible control device. Once hardwired to the photocell, the dimmer or relay will receive the photocell's real-time light measurement and maintain a steady level within the photocell's area of detection.

## Features and Benefits

- Indoor photocells are designed with a flat Fresnel lens that looks downward in a 60° cone of reference to measure actual light on the work surface, reducing the influence of stray light striking the photocell from nearby windows or incidental side lighting
- Outdoor photocells are IP54 rated to guarantee ultimate protection from dirt, dust, oil, and other non-corrosive material
- Measures light from any source in the visible spectrum within a 60° cone or 180° angle of response depending on the model
- Constant lighting at the optimal level for greater visual comfort and acuity, which contributes to improved productivity
- Provides convenient, automatic hands-free daylight harvesting when integrated with Leviton lighting control products
- Lowers electric bills by reducing usage of lighting where ambient natural light is also present
- Lumen maintenance opportunity compatible

## Photocells

| Description | Cat. No. | Lens | Sensing Range | Color |
|---|---|---|---|---|
| Photocell | ODC0P-00W | Clear | 1-1600fc | White |
| Switching Photocell | ODC0P-S0W | Clear | 1-1600fc | White |
| Dimming Photocell | ODC0P-D0W | Clear | 1-1600fc | White |
| Line Voltage Photocell | PCCxx-00W | Clear | 1-1600fc | White |
| Indoor Photocell | PCIND-000 | Fresnel | 75-800fc | White |
| Indoor Photocell | PCIND-0SV | Diffuse | 3, 30, 300 or 600fc | White |
| Outdoor Photocell | PCOUT-000 | Clear Hood | 50-750fc | White |
| Atrium Photocell | PCATR-000 | Dome/Frost | 215-2690fc | White |
| Skylight Photocell | PCSKY-000 | Dome/Frost | 1076-8072fc | White |

ODC0P-00W

# Room Control

## Provolt 0-10V Dimming Room Controllers (PRC)

The Leviton exclusive Provolt 0-10V Dimming Room Controllers (PRC) offer high-performance, code compliant, advanced room configuration in one easy-to-design, install and configure device. The PRC's features meet advanced design requirements for single room/area dimming applications offering easy configuration and operational testing for 0-10V manual dimming zone, occupancy sensing, plug load control, partial-ON, partial-OFF, two daylight harvesting zones, area control and demand response. Two light pipes are included for both open loop (angled) and closed loop (flat and angled) daylight harvesting. For closed loop applications, the angled light pipe provides directional fine tuning and alignment to natural light source. Download the Provolt Bluetooth® Mobile App for easy room configuration and testing via any iOS or Android device.


### Features and Benefits

**Automatic Room Configuration (ARC)**

- The industry-exclusive enhanced automation feature optimizes lighting by monitoring and adjusting to new technology introduced to a room while preventing interferences to the PRCs signal during the life of the product.
  - Room behavior and trending data adjusts automatic OFF timer
  - Ultrasonic (U/S) sensor sensitivity adjustments to reduce false ONs and false OFFs
  - U/S processing keeps room lighting operational by detecting other U/S sources and adjusting or shutting lights OFF as required
- Uploading and downloading custom room configuration templates reduces errors, speeds installation, testing and troubleshooting
- Used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6 requirements for occupancy/vacancy sensing
  - Continuous 0-10V dimming control
  - Daylight Harvesting
  - Area control (ON, dim-up, dim-down, OFF) manually dimmable-occupancy sensing auto-ON/auto-OFF
  - Occupancy sensing auto-ON and manual-ON
  - Partial-ON
  - Partial-OFF
  - Demand response
- Manual area control available for 3-way/multi-way applications with the Provolt (PLVSW) keypads (must all be same style)
- Manual control for single area dimming (dim both primary and secondary daylighting zones up and down simultaneously)
- Simplified daylight harvesting control of primary and secondary daylighting zones with full range 0-10V dimming
  - Primary zone dimmed up and down from photocell
  - Secondary zone dimmed up and down with offset from primary zone
- Two light pipes are included for both open (angled) and closed loop (flat and angled) daylight harvesting
  - The angled light pipe provides directional fine tuning and alignment to natural light source for closed loop applications
- Easily test room configuration using a smart device as a calibration, measurement and testing tool
- Connect a OPP20 power pack to a two circuit room controller for a plug load control solution
- Industry-exclusive H.I.S. (High Inrush Stability) technology
  - Tested to 1.2 million switching cycles under standard loads
  - Zero-crossing circuitry for extended life of the relay
  - Latching relay provides dependability and robust performance for all load types
- Easily download the Provolt Bluetooth Mobile App to an iOS or Android smart device and pair to the PRC using Bluetooth technology
- Select between Occupancy (Auto-ON/Auto-OFF) and Vacancy (Manual-ON/Auto-OFF)

| Provolt 0-10V Dimming Room Controllers | |
|---|---|
| **Description** | **Cat. No.** |
| Provolt Line Room Controller, primary daylighting control, ceiling mount, M/T, 2,000 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included) | O5C20-MDW |
| Provolt Line Room Controller, primary and secondary daylighting control, ceiling mount, M/T, 2,000 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included) | O6C20-MDW |
| Provolt Line Room Controller, primary daylighting control, ceiling mount, PIR, 450-1,500 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included) | O5C04-IDW |
| Provolt Line Room Controller, primary and secondary daylighting control, ceiling mount, PIR, 450-1,500 sq ft, 0-10V DC sinking signal for dimming ballast or LED driver, 120-277V (both lenses included) | O6C04-IDW |
| Download for free from Google Play or the Apple App Store | Provolt Mobile App |

For code compliant, manual wall station control use Provolt Low Voltage (PLVSW) 1, 2 or 4 Button Keypads with the 0-10V Dimming Room Controllers

O5C20-MDW

| Provolt 0-10V Dimming Room Controllers | |
|---|---|
| **Description** | **Cat. No.** |
| Provolt Keypads, 1-button ON/OFF controller for use with Provolt Room Controllers | PLVSW-1LW |
| Provolt Keypads, 2-button ON/OFF controller for use with Provolt Room Controllers | PLVSW-2LW |
| Provolt Keypads, 4-button ON/OFF controller for use with Provolt Room Controllers | PLVSW-4LW |
| 1-button Color Change Kit | RDGSW-1Ex* |
| 2-button Color Change Kit | RDGSW-2Ex* |
| 4-button Color Change Kit | RDGSW-4Ex* |
| 1-button Custom Engraved Color Change Kit | RDGSW-1Fx* |
| 2-button Custom Engraved Color Change Kit | RDGSW-2Fx* |
| 4-button Custom Engraved Color Change Kit | RDGSW-4FX* |

*Replace x to indicate color: White (W), Ivory (I), Light Almond (T), Gray (G), Black (E) and Red (R).
Color change kits are blank and available for engraving


PLVSW-4LW

# Hospitality Key Card Switches

Leviton key card switches are designed to provide energy savings for the hospitality industry by ensuring that no devices are left on when the room is not in use. These switches control electrical circuits by simply inserting or removing the guest's access card into the device. Both line voltage and low voltage switches are available for application flexibility.

## Features and Benefits

- Functions as dependable vacancy sensor when guest leaves and removes card
- Reduce energy costs by ensuring circuits are ON only during occupancy (when key card is in switch)
- Attractive low profile design with color change kit to meet the most common room designs or décor
- LED lighting illuminates the card slot for easy location in a dark room
- High Inrush Stability (H.I.S. Technology)
  - Zero crossing circuitry optimizes relay operation for reliable, long-life operation
  - Robust mechanical latching relay is durable for all load types
- No neutral model (HKSWP-GDX) is specially designed for retrofit applications where neutral wires are not available
- Low voltage model is compatible with applications utilizing building automation systems, energy management systems, and lighting control panels
- Requires WSTLT to operate within the LevNet RF network
- Fully rated to protect the entire circuit with UL Listing and 20A relay

| Hospitality Key Card Switches | |
|---|---|
| **Description** | **Cat. No.** |
| Hospitality Key Card switch with color change kit, 120-277V | HKSWP-0DX* |
| Hospitality Key Card switch with color change kit, 120-277V, no neutral | HKSWP-GDX |
| Hospitality Key Card switch with color change kit, 24V | HKSWP-0LX* |
| Faceplate, Gray, 25 pack | HKSWP-00G* |
| Faceplate, Ebony, 25 pack | HKSWP-00E* |

*All HKSWP models ship with the Color Change kit — includes a White, Ivory and Light Almond faceplate

HKSWP

# Integrated Room Control (IRC) Energy Management System

The Leviton Integrated Room Control (IRC) can be used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6, 0-10V dimming, daylight harvesting, partial-ON, partial-OFF, demand response and stairwell application control requirements. IRC features several methods of Ladderless Commissioning™ for install-and-forget convenience. The performance, features and capabilities of the IRC product provide a simple and cost-effective standalone energy management solution to maximize energy efficiency and meet energy code mandates for virtually any commercial control application.

## Features and Benefits

- Standalone, simplified daylight harvesting with full range dimming
- Demand response capabilities
- 2- or 3-zone control for LED lighting
- Kitted with factory configured sensor, photocell and 4-button switch
- 4-button switch available with ON, Bright, Dim and ON/OFF buttons with optional engraving
- 2 entry stations for individual manual zone control included with 2 zone, 2 relay kit (RCD20-102)
- Can be used to comply with 2022 Title 24, stairwell application control requirements
- Provides plug load control when paired with OPP20 Super Duty Power Pack
- Cost-effective energy code compliance
- Ladderless Commissioning™ provides install-and-forget convenience
- Convenient occupancy sensor and photocell integration
- Autocal automatic photocell target level calibration
- Accepts external time clock input to provide an OFF Sweep Function or modify the partial OFF function
- Simplified integration with emergency systems
- Controls maximum lighting output for additional energy savings potential and Task Tuning
- Daylight switching, full range 0-10V dimming
- Partial ON control for initial light level in either manual switch or occupancy sensor auto modes
- Partial OFF control for minimum continuous light level
- Adjustable minimum light level shut off value
- Emergency input drives auxiliary zones to full ON

## IRC Load Ratings

- 20A per relay, 120/277V
- 0-10vDC LED drivers, fluorescent, non-dimmed and 0-10V dimmed
- 120mA power output for operation of occupancy sensors, etc.

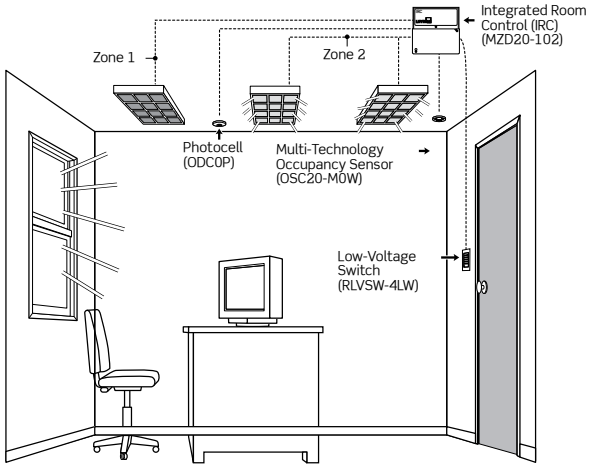
| Individual IRC Kits | |
|---|---|
| **Description** | **Cat. No.** |
| IRC Dimming Version, 2 zone, 2 relay, 120V or 277VAC | MZD20-102 |

| IRC Controller | |
|---|---|
| **Description** | **Cat. No.** |
| 4-button ON/OFF Controller for use with IRC System | RLVSW-4LW |
| 4-button Color Change Kit | RDGSW-4Ex* |
| 4-button Custom Engraved Color Change Kit | RDGSW-4Fx* |

*Replace x to indicate color: White (W), Ivory (I), Light Almond (T), Gray (G), Black (E) and Red (R).

IRC Kit

### Typical IRC Installation



# Lumina™ RF Wireless Room Control System

The Lumina™ RF Wireless Room Control System features a wireless keypad room controller that acts as the brain of the system. Add wireless control to virtually any ON/OFF or dimming device with Leviton wireless devices. Compatible with virtually all lamp fixtures and load control devices, Lumina RF offers a scalable, flexible wireless mesh solution to meet the unique control needs of virtually any space all without having to pull new wires. Control one fixture or a group of fixtures in multiple zones.

## Features and Benefits

- Compatible with virtually all lamps, fixtures and load control devices for a simple and flexible wireless system
- Scalable, flexible wireless controls for retrofits and new construction
- Control one fixture or a group of fixtures in multiple zones
- Configure, monitor and control the system with the Lumina RF Standalone App—the only setup tool needed
- Can be used to comply with IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 space/area control, dimming, occupancy/ vacancy sensing, automatic shutoff, multi-zone daylight harvesting and receptacle control requirements

## Lumina RF Wireless System Compatibility Chart

### Room Controllers


**Lumina RF Keypad Room Controllers***

- The "brain" of the system — just one room controller per space needed
- Coordinates all the energy management functions in a space and provides multi-zone control, full range dimming, scene control and manual control
- Wirelessly configure button operation via the Lumina™ RF Standalone App

**Decora Wireless Wall Switch Room Controller and Dimmer with 5A Relay**

- The "brain" of the system — just one room controller per space needed
- Provides ON/OFF control with additional room control capabilities available in the Keypad Room Controller
- 0-10V dimming model available

**Lumina RF Standalone App**

- The only setup tool needed, allows for room configuration, monitoring and remote control from an Android or iOS smart device
- Download via Google Play or Apple App Store

### Leviton Wireless Devices

**Wireless Power Packs**

- Add to virtually any lamp or fixture for a wireless ON/OFF, 0-10V dimming and phase cut dimming solution
- 800W Phase Cut Dimming Power Pack (LU04P) allows for dimming of full phase loads
- 10A 0-10V Dimming Power Pack (LU107) can be used to dim any 0-10V controlled load
- 20A ON/OFF Switching Power Pack (LU20S) is an ON/OFF relay that can be used for plug load control, motor loads, or non-dimming luminaires

**Decora Wireless 24VDC Low Voltage Wall Dimmer**

- Low voltage rocker manual dimmer is used to control any 0-10V dimming ballast or LED driver
- 24VDC is supplied by an OPP20 Power Pack which also switches the load ON and OFF

**Decora Wireless 10A 0-10V Wall Dimmer**

- Provides wireless control of lighting loads including 0-10V dimming and ON/OFF control
- Manual switch with dimming bar used to provide wireless control of lighting loads including high inrush LED loads

**Zigbee Controlled Receptacle**

- Provides wireless ON/OFF plug load control of lamps, appliances and other similar devices up to 15A

**Wireless 10A ON/OFF Wall Switch**

- Used to provide wireless control of lighting loads including high inrush LED loads

**Zigbee PIR Occupancy Sensor & Photocell**

- Add wireless occupancy/vacancy sensing and daylight harvesting with no additional wiring
- Communicates occupancy and/or light levels to a Leviton Room Controller or Zigbee 3.0 compatible room controller/gateway
- Equipped with a high-resolution digital photocell for applications that require daylight harvesting or ambient light hold-off

## Lumina RF Wireless Room Control System

### Lumina RF Wireless Keypad Room Controllers*

| Description | Cat. No. |
|---|---|
| Lumina RF 1-Button multi-function BLE keypad with room controller, 120-277VAC, 50/60Hz | DLDNK-01W |
| Lumina RF 2-Button multi-function BLE keypad with room controller, 120-277VAC, 50/60Hz | DLDNK-02W |
| Lumina RF 4-Button multi-function BLE keypad with room controller, 120-277VAC, 50/60Hz | DLDNK-04W |
| Lumina RF 8-Button multi-function BLE keypad with room controller, 120-277VAC, 50/60Hz | DLDNK-08W |
| Decora Wireless Wall Switch Room Controller with 5A Relay, 120-277VAC, 50/60Hz, 5A Load | DL05S-D0Z** |

### Wireless Wallbox Room Controller

| Description | Cat. No. |
|---|---|
| Decora Wireless 0-10V Wallbox Room Controller, 2.4GHz, 120-277VAC, 50/60Hz, 5A Load | DL057-D0Z |
| Decora Wireless 0-10V Wallbox Room Controller, 2.4GHz, 347VAC, 50/60Hz, 5A Load | DL057-30Z |

*Not compatible with other Lumina® RF Gateway products. Contact Leviton for more information

### Leviton Bluetooth-Enabled Lumina™ RF Standalone App

| Description | Cat. No. |
|---|---|
| Lumina RF Standalone App (download via Apple App Store or Google Play) | Free |

### Wireless Load Control Devices

| Description | Cat. No. |
|---|---|
| Wireless 20A ON/OFF Switching Power Pack | LU20S-DNW |
| Wireless 10A, 0-10V Dimming Power Pack | LU107-DNW |
| Wireless 800W Phase Cut Dimming Power Pack | LU04P-1NW |

### Wireless Dimmers and Switches

| Description | Cat. No. |
|---|---|
| Decora Wireless Wall Switch, 2.4 Zigbee, 120-277 VAC, 50/60Hz, 10A Load | ZS10S-D0Z |
| Decora Wireless 24VDC Low Voltage Wall Dimmer, 2.4GHz, 24VDC, 0-10V Sinking, 20mA | ZS057-ALZ |
| Decora Wireless 0-10V Wall Dimmer, 2.4 GHz, 120-277 VAC, 50/60Hz, 8A Load, 0-10V Sinking, 50mA | ZS057-D0Z |
| Decora Wireless 0-10V Wall Dimmer, 2.4 GHz, 347VAC, 50/60 Hz, 4A Load, 0-10V Sinking, 50 mA | ZS057-30Z |

### Zigbee Controlled Receptacle

| Description | Cat. No. |
|---|---|
| Zigbee Controlled Receptacle | ZSTLR-1HW |

### Zigbee PIR Occupancy Sensor & Photocell

| Description | Cat. No. |
|---|---|
| Zigbee PIR Occupancy Sensor and Photocell | ZC015-BIW |

# Sapphire™ Touch Screen Room Controller

Sapphire™ Touch Screen Room Controller provides the flexibility of a fully customizable user interface with the convenience of native controls from Leviton's Commercial Systems products. Sapphire Room Controllers are Leviton's premier touch screen offering occupancy/photocell sensing, full-range automatic dimming, color tuning and daylighting integration. Schedule holidays and daily lighting schedules from the touch screen.

## Features and Benefits

- 7" capacitive touch screen
- User interface components
  - Tabs/pages
  - Buttons
  - Sliders
- Touch screen status updated from actual device status
- LumaCAN connectivity
- Secure password protected administration
- Online/offline configuration and screen design through PC Tool
- Software and configuration updates through front panel USB memory stick
- Available faceplates: White, Light Almond and Black

### LCD Applications

- Color tuning — 0-10V, DMX
- Conference room control
- Building supervisor control panel
- Classroom control
- Executive office control
- Ballroom control
- Anywhere touch-interface is desired

### Room Controller Details

- (2) low voltage/analog inputs for connecting of occupancy sensors, photocells, etc.
- Receives input signals for automatic dimming and daylighting within the space
- Allows for closed loop daylight harvesting

### Scheduler Details

- 7 day scheduler
- (2) custom, user-defined holiday exception calendars for convenience, and can be used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6 scheduling requirements
- Astronomical time clock and special event calendar
- Incorporate color tuning strategies for circadian rhythm simulation that can continuously run in the background without any scheduled events

### Button Details

- Button Operating Modes
  - Toggle
  - Press/release
  - Preset group
- Configurable caption
- All network commands supported

### Network Commands

- Administrative Functions
  - Network setup
  - Log file import/export
  - Configuration update
  - Snapshot record
  - Snapshot edit
- Set channel level
- Set group level
- Fade stop
- Room combine/separate
- Fade rate or fade time
- Raise/lower

**Sapphire Touch Screen Room Controller**

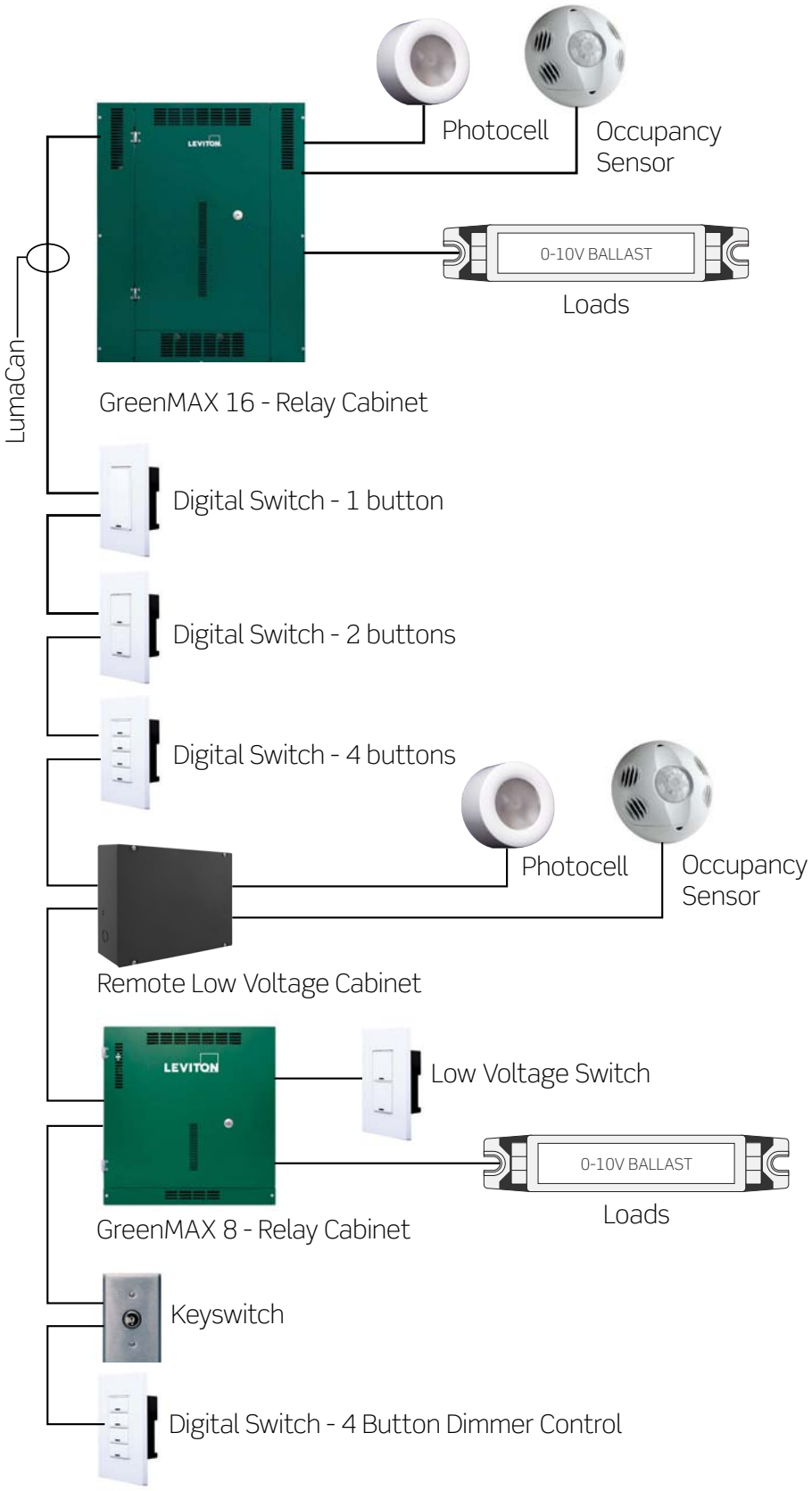
| Description | Cat. No. |
|---|---|
| 7" Touch Screen, capacitive interface, no faceplate included | TS007-000 |
| 7" Touch Screen Color Change Kit, Black faceplate | TS007-COE |
| 7" Touch Screen Color Change Kit, Light Almond faceplate | TS007-COT |
| 7" Touch Screen Color Change Kit, White faceplate | TS007-C0W |
| 7" Touch Screen Locking Cover, Black | TS007-LCE |
| 4 Gang Box | BBG04-000 |
| 4 Gang raised device ring for use with BBG04-000 | WPG04-DR0 |
| +24VDC, 1A, 30W 100-277VAC input DIN Rail Power Supply. UL, CUL & CE. Terminals on input and output | PST24-I10 |

Sapphire with Black Faceplate

# GreenMAX® Relay Control Panels

## Smart Lighting Control

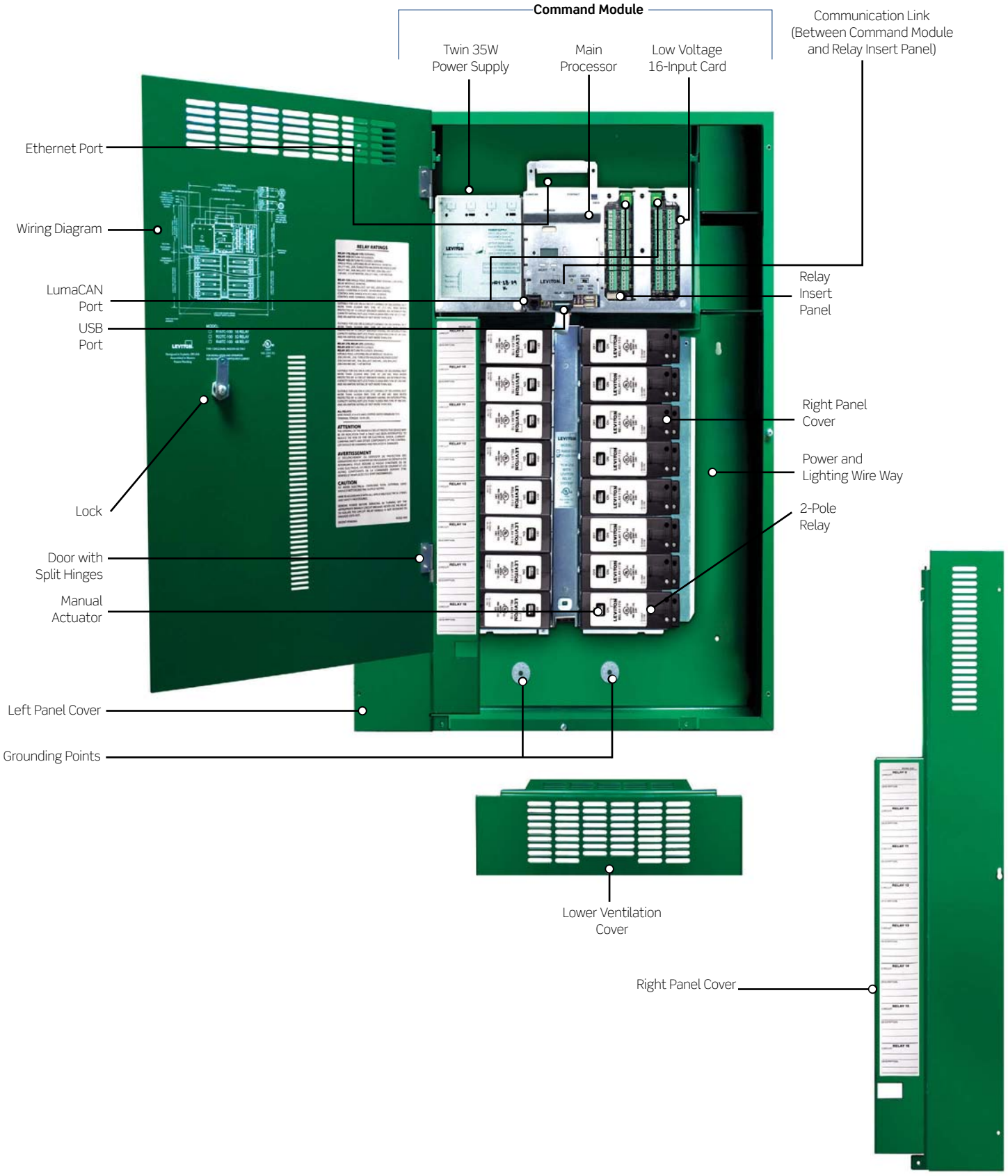
Designed for the contractor, specifier and end user, GreenMAX® Relay Control Panels offer the best performance, reliability, flexibility and energy savings of any relay control available. GreenMAX easily integrates lighting control strategies that include switching, dimming, pulse control, behavior controls, scheduling, occupancy sensing and daylight harvesting.



## Features and Benefits

- Scalable solution offers future expansion opportunities
- Easy energy code compliance and LEED point eligibility
- Can be used to comply with IECC, ASHRAE 90.1, and 2022 Title 24, Part 6 occupancy/vacancy sensing, 0-10V dimming, daylight harvesting, partial-ON, partial-OFF, scheduling, demand response, and receptacle control requirements
- Daylight harvesting capabilities
  - Dimming
  - Switching
  - Open Loop
  - Closed Loop
- Highest Short Circuit Current Rating (SCCR) of 25,000A at 277VAC for maximum equipment reliability
- Robust latching Relay Modules are rated 30A general fluorescent ballast and 20A electronic ballast in 1-pole and 2-pole configurations with the same footprint, available with or without the Return to Closed (RTC) functionality
- 0-10V dimming control with dimming and switching relay modules
- 0-10V and timed control using Leviton's exclusive behavioral design — use with low voltage sensors, photocells and switches
- 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
- Communication over LumaCAN and Ethernet — to simplify configuration and ensure start up simplicity
- Accommodates low voltage inputs such as occupancy sensors, photocells, contact closures, and switches
- 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 wallplates
- Relay pulse control provides control of large mechanical contactors
- Industry leading 25,000A Short Circuit Rating (SCCR) at 277VAC withstands circuit faults for increased safety
- Native communications 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
- Meets California Energy Commission demand response requirements
- 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
- All programming and configurations are stored on a MicroSD memory card, which eliminates the need for non-volatile memory
- BMS interface through BACnet IP

# GreenMAX Relay Control Panels



## GreenMAX Relay Control Panels

### Features and Benefits

- GreenMAX system connects together with Cat6 cable and RJ45 connectors; power is provided to devices over this network running the LumaCAN protocol
- Empty cabinet enclosures ship separately from electronic components — Command Module and Relay Insert Panel — making the cabinets 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 0-10VDC 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 isolation barrier between relays to eliminate the need for an additional cabinet to handle emergency loads and to allow voltages from mixed sources in the same cabinet
- Native communications network protocols — BACnet IP and Ethernet — are built into each Command Module to offer unparalleled connectivity; no additional devices are needed to communicate with other products utilizing these protocols

## GreenMAX Relays

### Features and Benefits

- All GreenMAX relay modules have a 25,000A at 277VAC Short Circuit Current Rating (SCCR) for increased reliability and durability
- Rated at 30A general fluorescent ballast and 20A incandescent, HID, electronic ballast, and LED
- 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 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
- Metering relays provide 3% accuracy and are not suitable for revenue grade applications
- Data is provided over BACnet through analog output objects and may be aggregated using Leviton's Measurement & Verification products
- LED Ready


R16TC

RELAY-1DS

## GreenMAX Handheld Display Unit (HDU)

### Features and Benefits

- Allows programming, system configuration and scheduling to be done in the space being controlled rather than in 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 ; batteries charge when plugged into the LumaCAN network
- Astronomical clock — sunrise/sunset
- HDU need not 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

Handheld Display Unit (HDU)

## GreenMAX Switches

### Features and Benefits

- GreenMAX digital key switches provide secure button presses on the network
- Manual control as required by energy codes
- Available in 1, 2, 4 and 8 button configurations, and key switch version
- Custom engraved labeling available on switch buttons and plastic screwless wallplates; engraving not available on stainless steel wallplate
- Switch colors available: White, Light Almond, Ivory, Gray, Black, and Red; all come with a matching wallplate; key switch 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
- 1, 2, 4, and 8 button 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 0-10VDC dimming circuits
- Easy-to-access port on top of switch provides connectivity for the GreenMAX HDU


RDGSW-1C


RDGSW-2C


RDGSW-4C


RDGSW-8C


RDGSW-1KS

## 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 the 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

**GreenMAX Lighting 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 | — |
| B6 | 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 |
| B7 | Turn ON at specific time. | — | — | — | ON |
| B8 | Turn OFF at specific time. | ON/OFF | 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 relinquishes control to the constant ON state. | — | OFF | — | ON |
| B13 | Occupancy sensor turns lights partially ON. Switch turns lights ON full bright or turns them OFF | ON/OFF | — | ON/OFF | — |
| B14 | Lights ON at minimum level. Occupancy sensor raises/lowers light level between Partial-ON and full ON | ON/OFF | — | — | — |

## GreenMAX Lighting Behaviors

| Behavior | Description | Coverage |
|---|---|---|
| B1 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. 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. | 1-254 minutes |

## GreenMAX Relay Control Panels

| 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, option 24VDC Low Voltage Input Card)** | |
| RPM00-300 | Main Command Module, 100-277VAC, 50/60 Hz, no inputs, LumaCAN3 |
| RPM08-308 | Main Command Module with 8-Port Low Voltage Input Card, 100-277VAC, 50/60Hz, LumaCAN3 |
| RPM16-316 | Main Command Module with 16-Port Low Voltage Input Card, 100-277VAC, 50/60Hz, LumaCAN3 |
| **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 Dimming and Switching Relays |
| R1616-2CB | Relay Insert Panel with 16 2-Pole RTC Relays |
| **Handheld Display Unit (HDU)** | |
| RHDU1-300 | Handheld Display Unit, Cabinet Mounting, LumaCAN3 |
| RHDU1-001 | Handheld Display Unit, Mounting Bracket Requires 2 Gang Back Box |
| **Remote Inputs with Power Supply (all cabinet power supplies rated 120-277VAC, 50/60Hz)** | |
| RLV08-308 | Remote Low Voltage Input Cabinet, 8 Inputs, NEMA 1 Enclosure, LumaCAN3 |
| RLV16-316 | Remote Low Voltage Input Cabinet, 16 Inputs, NEMA 1 Enclosure, LumaCAN3 |
| **Relays** | |
| RELAY-1CB* | GreenMAX Latching Relay, 1-Pole RTC Basic |
| RELAY-1DS+ | GreenMAX Latching Relay, 1-Pole dimming and switching, 0-10VDC Dimming, Sinking, LED Control |
| RELAY-2CB* | GreenMAX Latching Relay, 2-Pole RTC |
| RELAY-BFM | Blank Filler Module |

| GreenMAX Relay Control Panel Components | |
|---|---|
| **Cat. No.** | **Description** |
| **Digital Switches and Color Change Kits** | |
| RDGSW-1Cx** | GreenMAX Digital Switch, 1-Button, LumaCAN3 |
| RDGSW-2Cx** | GreenMAX Digital Switch, 2-Button, LumaCAN3 |
| RDGSW-4Cx** | GreenMAX Digital Switch, 4-Button, LumaCAN3 |
| RDGSW-8Cx** | GreenMAX Digital Switch, 8-Button, LumaCAN3 |
| RDGSW-1KS | GreenMAX Keyswitch |
| RDGSW-1Ey*** | GreenMAX 1-Button Color Change Kit |
| RDGSW-2Ey*** | GreenMAX 2-Button Color Change Kit |
| RDGSW-4Ey*** | GreenMAX 4-Button Color Change Kit |
| RDGSW-8Ey*** | GreenMAX 8-Button Color Change Kit |
| RDGSW-1Fy*** | GreenMAX 1-Button Engraved Color Change Kit |
| RDGSW-2Fy*** | GreenMAX 2-Button Engraved Color Change Kit |
| RDGSW-4Fy*** | GreenMAX 4-Button Engraved Color Change Kit |
| RDGSW-8Fy*** | GreenMAX 8-Button Engraved Color Change Kit |
| **Cabinet Accessories** | |
| RGBAR-008 | GreenMAX Voltage Barriers for 8-Relay Cabinets |
| RGBAR-016 | GreenMAX Voltage Barriers for 16-, 32- and 48-Relay Cabinets |

*Replace * with B for Standard Relay or M for Metering Relay
+Replace + with S for Standard Relay or M for Metering Relay
**Replace x with the following color codes — (W) White, (I) Ivory, (T) Light Almond and (G) Gray.
***Replace y with the following color codes — (W) White, (I) Ivory (T) Light Almond, (G) Gray, (E) Black, (R) Red

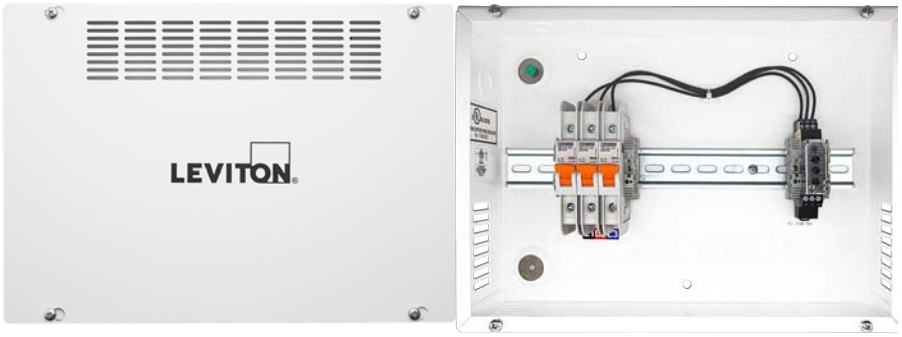
## Phase Loss Relay

The Leviton Phase Loss Relay Panel detects loss of voltage on any of three phases and triggers a contact closure on the output when one of the phases is lost. A contact closure is used to signal panels like GreenMAX to go into EM mode.

### Features and Benefits

- Monitors 3PH, 120 or 277V incoming power and triggers a contact closure when the voltage goes above 10% or below 20%
- Covers situations where power monitoring is needed as required by emergency systems
- Can be used with GreenMAX Relay Panels
- DIN Rail Enclosure dimensions: 12.9" (33cm), 14" x 10" x 4" (36cm x 26cm x 12cm)
- Field configurable for 120 or 1277V, shipped for 120V monitoring

| Phase Loss Relay | |
|---|---|
| **Cat. No.** | **Description** |
| DINRK-PLR | Phase Loss Relay, contractor configurable for 120/208VAC or 277/480VAC |



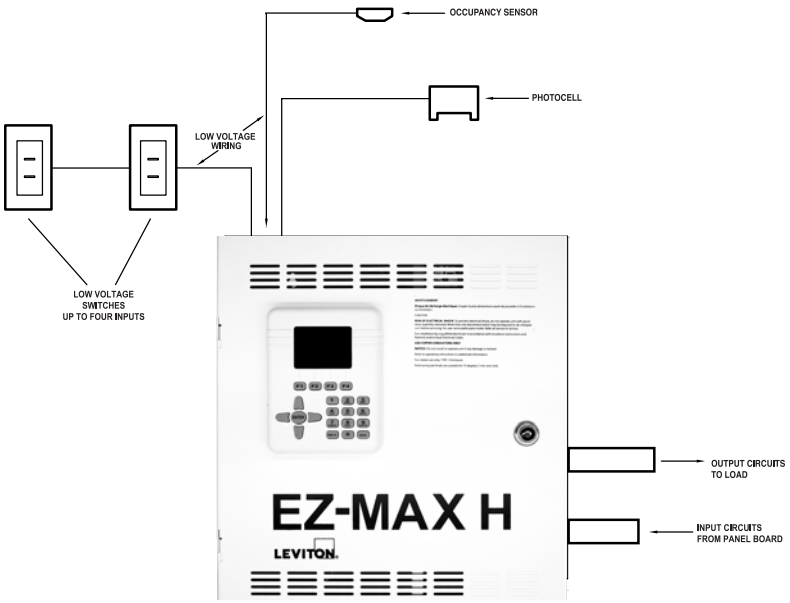

DINRK-PLR

# EZ-MAX® H Relay Panels

EZ-MAX H Relay Lighting Control Panels pack power and performance in compact and cost-effective 8-circuit and 24-circuit models. EZ-MAX H is the ideal solution for smaller, stand-alone applications that do not require the field configuration or advanced networking features like the GreenMAX Relay Control systems. Programming is easy with the EZ-MAX H with a large LCD screen on the panel. EZ-MAX H 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 and Benefits

- LCD user interface with keypad
- 8 and 24 relay panel sizes, relays sold separately
- Astronomical and real time clock for scheduling
- 4 Open/Close Time Schedules, and 99 holidays (including recurring U.S. holidays)
- Each relay card includes one low voltage input
- Upload or save programming via removable SD memory card
- Panels have hinged locking doors
- Keypad user interface mounted on exterior of door
- Knockouts on top and bottom for low voltage and line voltage feeds
- NEMA 1 surface mount enclosure
- UL916, UL924 and cUL listed
- 5 year limited warranty




## EZ-MAX H

| Description | Cat. No. |
|---|---|
| EZ-MAX H Relay Panel 8-Circuit, relays purchased separately | R08BD-H00 |
| EZ-MAX H Relay Panel 24-Circuit, relays purchased separately | R24BD-H00 |
| 1-Pole Latching 20A @120VAC-Tungsten; 16A @120/277VAC-Elect. Ballast; 30A @120/277 VAC-Mag. Ballast; 20A @347VAC Elect. Ballast; 18K SCCR @347VAC | RELAY-L3H |
| 2-Pole, Elect. Held N.O. 20A @208/240/480VAC Mag. Ballast; 14K SCCR @480VAC | RELAY-2PH |

## Accessories Ordering Information

| Description | Cat. No. |
|---|---|
| Relay circuit barrier for EZ-MAX H Series lighting control panel | RGBAR-EZH |
| Low Voltage Switches | 00LVS-xxW |
| Outdoor Photocell, 0-10V, 0-250 fc | PCOUT-000 |
| Indoor Photocell, 0-10V, 0-150 fc | PCIND-000 |
| Atrium Photocell, 0-10V, 0-1000 fc | PCATR-000 |
| Skylight Photocell, 0-10V, 0-2000 fc | PCSKY-000 |

# Track Light Limiting Panel (TLLP)

The Track Light Limiting Panel (TLLP) enables designer lighting to easily meet energy code watt density requirements. Limiting branch circuit volt-amperage rating with the TLLP sets a fixed power consumption limit for lighting installations instead of calculated values based on watts per linear foot of the track. Track lighting can now be specified for as many linear feet of track as desired without violating code specifications.

## Features and Benefits

- Enables designer lighting to easily meet energy code watt density requirements
- Assists track lighting schemes and can be used to comply with ASHRAE 90.1, City of Seattle guidelines, and 2022 Title 24, Part 6 track lighting requirements
- 2022 California Title 24 Track Light Supplementary Overcurrent Protection Panel
- Simplifies load calculations by using volt-ampere rating of the breaker as opposed to calculated values on the track
- Reduces installation costs
- Available in 16 or 32 circuit panels
- NEMA 1 surface or flush mount enclosure
- Factory configured to your specifications — arrives ready to install

## Track Light Limiting Panel (TLLP) Ordering Information

G □□ □ □ - 1 □

**Spaces**
**16** = 16 Spaces
**32** = 32 Spaces

**Mount**
**F** = Flush Mount
**S** = Surface Mount

**Voltage**
**1** = 120VAC
**7** = 277VAC

**# OF NEMA 1 CIRCUIT BREAKERS INSTALLED**

**Indicate 2-digit multiple of 2, available from 02-32***

Note: Specify breaker size and configuration on configuration form.
Note: Completed configuration form must accompany order.
*Available breaker sizes: 0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 10A, 13A, 15A, 16A, 20A, 25A, 30A, 32A, 40A, 50A, 60A

# Distributed Controls

## GreenMAX DRC Wired and Wireless Room Control System

Confidently design and specify a secure, simple and scalable distributed control system with GreenMAX DRC Wired or Wireless solutions.

### Features and Benefits

- Enables a full suite of lighting control capabilities including programmable room behaviors, occupancy/vacancy sensing, daylight harvesting, scene control, and multi- location control
- Fully configurable using the GreenMAX DRC App via any WiFi-enabled Android or iOS smart device
- GreenMAX DRC Wired and Wireless are fully encrypted, allowing for secure communication and control
- Flexibility to grow and change with your business and its evolving needs as a scalable solution; add additional components at any time to modify or expand the system, and re-configure rooms and zones from the convenience of your smart device
- GreenMAX DRC Digital Keypads feature antimicrobial treated plastic to help keep its surfaces cleaner and prevent microorganisms from degrading the product
- This product contains an antimicrobial agent to inhibit the growth of mold, mildew, fungus and odor-causing bacteria that cause discoloration, staining, deterioration or corrosion on the surface of the device in between normal cleanings
- User Access Controls allow for employees or tenants to use their own app interface to set scenes and make adjustments, while keeping the overall facility secure — the perfect balance of pre-configured maintained settings and human-centric lighting

## GreenMAX DRC Wired

### GreenMAX DRC App

- For Android and iOS smart devices
- Configures the system as the only setup tool needed
- Wirelessly communicates with system components via WiFi
- Manage devices, create groups, configure daylighting zones, edit scenes, and program digital keypads from the palm of your hand, and effortlessly make adjustments as necessary
- DRC Scheduler feature allows end users to create and add events and schedules to fit the lighting control needs of the space
- Duplicate settings for like spaces across an entire facility or campus to drastically reduce commissioning time
- Allow users to adjust their individual space's lighting to accommodate preferences and temporary needs through their own smart device while protecting administrative settings with the User Control Interface

### GreenMAX DRC Wired Line and Low Voltage Room Controllers

- One room controller required in every room
- System operation and power control — receives commands from user interfaces (smart device, sensors, keypads, touchscreen)
- Serves as the "brain" of any GreenMAX DRC Room Control System by coordinating the energy management functions within the room
- Low voltage model is powered from LumaCAN network and can be surface mounted or installed into a DIN rail enclosure
- Line voltage model includes relay and 0-10V control and installs into knockout or acts as cover for a 4" square box
- Connects to building WiFi network for configuration and communication between rooms, or is its own access point for direct connection

### GreenMAX DRC 0-10V Smart Pack

- Enables switching and 0-10V dimming control of a single zone of fixtures
- Supports plug load control applications
- Eliminates the need to run wires back to a cabinet, saving on installation and equipment costs
- Single channel device — (1) 0-10V output plus (1) relay
- Connects via the LumaCAN network using RJ45 connectors and CAT6 cabling
- 0-10V control can be Class 1 or Class 2 wiring

### GreenMAX DRC Phase Control Dimmer

- Incorporates 2-wire phase control loads into GreenMAX DRC systems
- 1-4 channel LumaCAN forward or reverse phase control dimmer
- Control wall sconces, chandeliers, pendant lighting, track lighting, and more for precise dimming of elegant, modern light fixtures
- Utilizes Leviton High Inrush Stability (H.I.S.) circuitry for increased reliability
- Connects via the LumaCAN network via RJ45 connectors and CAT6 cabling
- AMPlify feature — combine channels for increased capacity
- Each channel phase selectable — supports LED loads at full capacity

### GreenMAX DRC LumaCAN to DALI Gateway

- Interface to DALI fixtures
- Converts LumaCAN channels to DALI driver control
- Short address assignment to DALI devices
- Fixed fade time for each device
- (2) independent DALI bus on one gateway

### Luma-Net to LumaCAN Gateway

- Bidirectional protocol converts from Luma-Net to LumaCAN and vice versa
- Processes channel, group and dimmer status messages
- 250 nodes per subnet with 254 subnets

### GreenMAX DRC Digital Sensor

- Occupancy/vacancy detection using PIR technology with a 450 sq ft field of view with an integrated photocell that offers light level detection, 0-100 footcandles
- Interfaces to the GreenMAX DRC system via the LumaCAN port for simplified specification and installation
- Integrated occupancy/vacancy and photocell design offers more capabilities while requiring less equipment and wiring

### Analog Occupancy/Vacancy Sensors

- Monitor spaces for occupancy, and switch/dim lights ON/OFF accordingly, or provide manual-ON/auto-OFF control in vacancy mode
- Available with passive infrared, ultrasonic or multi-technology sensing to accommodate any size and style of application
- Industry's largest number of SKUs include ceiling mount, wall mount, fixture mount, wall switch, low and line voltage, self-contained, and wireless versions to cover any and all end user needs and preferences

### GreenMAX DRC Analog Interface (AI)

- Interface to non-LumaCAN devices, including sensors, photocells, and low-voltage switches
- Demand response interface
- Fire alarm/security system interface
- Powered from LumaCAN network

### GreenMAX DRC Digital Keypads

- Permanently installed keypad user interface to the GreenMAX DRC system
- Multi-location control
- Available in 1-, 2-, 4-, and 8-button configurations
- Custom engraved labeling available on switch buttons and screwless wallplates
- Each button can be individually programmed for ON, OFF, ON/OFF, room raise/lower, last selected scene raise/lower, scene, and other customizable scenes and settings via the GreenMAX DRC app
- Mounts into a standard-depth wallbox — all switches can be installed in a multi-gang application (multi- gang wallplate sold separately)

### Sapphire Touch Screen

- Fully customizable user interface that integrates the GreenMAX DRC Room Control System
- Features LumaCAN connectivity
- 2 low voltage/analog inputs for connecting of occupancy sensors, photocells, etc.

## Room Controllers

| GreenMAX DRC App | |
|---|---|
| **Description** | **Cat. No.** |
| For use with Android and iOS smart devices; visit www.leviton.com/apps to download | — |

| Wired Room Controllers | |
|---|---|
| **Description** | **Cat. No.** |
| GreenMAX DRC Room Controller with interface to LumaCAN, Lumina RF/ZigBee, and WiFi networks, 120-277VAC, 50/60Hz, 0-10V, line voltage | DRC07-ED0 |
| GreenMAX DRC Room Controller with interface to LumaCAN, Lumina RF, ZigBee, and WiFi networks, 347VAC, 60 Hz, 0-10V, line voltage | DRC00-030 |
| GreenMAX DRC Room Controller with interface to LumaCAN, Lumina RF, ZigBee, and WiFi networks, DIN rail form factor, low voltage | DRC00-0L0 |

## Load Controls

### 0-10V Smart Pack

| Description | Cat. No. |
|---|---|
| GreenMAX DRC Smart Pack, 0-10V, 120-277VAC, 50/60 Hz, 20A max, 100mA sink current | DRD07-ED0 |

### Phase Control Dimmers

| Description | Cat. No. |
|---|---|
| GreenMAX DRC LumaCAN DIN Rail Dimmer 2 Channel, 3.5A per channel, 120-277VAC, 50-60H* | DRDDP-A20 |
| GreenMAX DRC Phase Control Dimmer | DRDDP-A40 |

*Requires DIN rail enclosure, purchased separately

### LumaCAN to DALI Gateway

| Description | Cat. No. |
|---|---|
| LumaCAN to DALI Gateway, DIN rail mount | DRCDD-0L0 |

### Luma-Net to LumaCAN Gateway

| Description | Cat. No. |
|---|---|
| Luma-Net to LumaCAN Gateway | NP00G-000 |

### Digital and Analog Sensors

| Description | Cat. No. |
|---|---|
| GreenMAX DRC Digital Sensor, 1,500 sq ft, white | OSR05-ICW |
| Visit www.leviton.com/sensors for selection, or reference the Leviton Sensor Guide for a full selection | — |

### Analog Interface (AI)

| Description | Cat. No. |
|---|---|
| GreenMAX DRC 2-Port AI, LumaCAN, DIN rail or surface mount | DRID0-C02 |
| GreenMAX DRC 2-Port AI, mounted to blank plate for installation onto 4-11/16" back box | DRID0-CB2 |

## User Interfaces

### Digital Keypads

| Description | Cat. No. |
|---|---|
| GreenMAX DRC Digital Keypad, 1-button, LumaCAN | DRKDN-C1W |
| GreenMAX DRC Digital Keypad, 2-button, LumaCAN | DRKDN-C2W |
| GreenMAX DRC Digital Keypad, 4-button, LumaCAN | DRKDN-C4W |
| GreenMAX DRC Digital Keypad, 8-button, LumaCAN | DRKDN-C8W |
| GreenMAX DRC 1-Button Color Change Kit | CKDNK-10y* |
| GreenMAX DRC 2-Button Color Change Kit | CKDNK-20y |
| GreenMAX DRC 4-Button Color Change Kit | CKDNK-40y |
| GreenMAX DRC 8-Button Color Change Kit | CKDNK-80y |
| GreenMAX DRC 1-Button Color Change Kit with Engraving | CKDNK-1Ey |
| GreenMAX DRC 2-Button Color Change Kit with Engraving | CKDNK-2Ey |
| GreenMAX DRC 4-Button Color Change Kit with En graving | CKDNK-4Ey |
| GreenMAX DRC 8-Button Color Change Kit with Engraving | CKDNK-8Ey |
| GreenMAX DRC Engraved Wallplate | WPDN0-1EX |
| GreenMAX DRC 1-Button Antimicrobial Color Change Kit | CKDAK-10y* |
| GreenMAX DRC 2-Button Antimicrobial Color Change Kit | CKDAK-20y |
| GreenMAX DRC 4-Button Antimicrobial Color Change Kit | CKDAK-40y |
| GreenMAX DRC 8-Button Antimicrobial Color Change Kit | CKDAK-80y |

* Replace y to indicate color: (W) = White, (I) = Ivory, (T) = Light Almond, (G) = Gray (R) = Red, (E) = Black
Wallplate purchased separately, recommended Leviton Cat. No. 80301 screwless wallplates
Antimicrobial Treated Wallplates sold separately. Order 80401-2AW 1-Gang Decora Wallplate, 80409-2AW, 2-Gang Decora Wallplate, 80411-2AW, 3-Gang Decora Wallplate

## User Interfaces

### Sapphire™ Touch Screen

| Description | Cat. No. |
|---|---|
| 7-in Touchscreen, capacitive interface, no faceplate included | TS007-000 |
| 7-in Touchscreen Color Change Kit, black faceplate | TS007-C0E |
| 7-in Touchscreen Color Change Kit, light almond faceplate | TS007-C0T |
| 7-in Touchscreen Color Change Kit, white faceplate | TS007-C0W |
| 7-in Touchscreen Locking Cover, black | TS007-LCE |

## GreenMAX DRC Wireless

### GreenMAX DRC App

- For Android and iOS smart devices
- Configures the system as the only setup tool needed
- Wirelessly communicates with system components via WiFi
- Manage devices, create groups, configure daylighting zones, edit scenes, and program digital keypads from the palm of your hand, and effortlessly make adjustments as necessary
- DRC Scheduler feature allows end users to create and add events and schedules to fit the lighting control needs of the space
- Duplicate settings for like spaces across an entire facility or campus to drastically reduce commissioning time

### GreenMAX DRC Wireless Keypad Room Controllers

- Wireless interface for configuration, control, and status monitoring
- Two operating modes: access point for standalone operation, and Wi-Fi client for connecting to building network
- Use any Android or iOS for configuration using the GreenMAX DRC App — available in the Apple App Store and Google Play App Store
- Models include 1-, 2-, 4-, and 8-button options
- Wireless mesh network connection to wireless devices and Intellect-enabled fixtures
- Acting as a room controller, these devices implement energy management business logic for the controlled space
- Each button can be individually programmed for ON, OFF, ON/OFF, dimmed raise/lower, scene ON level, group raise/lower, and other customizable scenes and settings via the GreenMAX DRC App

### Load Control Devices

- Expand GreenMAX DRC capabilities with wireless power packs, switches, dimmers and controlled marked receptacles
- Add wireless control to any ON/OFF, 0-10V dimming or phase cut dimming device

### Integrated Fixtures by Leviton Lighting Brands and Other Manufacturers

- Virtually any fixture can be integrated with wireless occupancy/vacancy sensing and dimming control

### Zigbee PIR Occupancy Sensor

- Allow for daylighting, occupancy/vacancy sensing

## User Interfaces

**GreenMAX DRC App**

| Description | Cat. No. |
|---|---|
| For use with Android and iOS smart devices; Download at the Apple App Store or Google Play | — |

**Wireless Keypad Room Controllers**

| Description | Cat. No. |
|---|---|
| GreenMAX DRC Wireless Keypad Room Controller, 1-Button | DRKDN-U1W |
| GreenMAX DRC Wireless Keypad Room Controller, 2-Button | DRKDN-U2W |
| GreenMAX DRC Wireless Keypad Room Controller, 4-Button | DRKDN-U4W |
| GreenMAX DRC Wireless Keypad Room Controller, 8-Button | DRKDN-U8W |
| GreenMAX DRC 1-Button Color Change Kit | CKDNK-10y* |
| GreenMAX DRC 2-Button Color Change Kit | CKDNK-20y |
| GreenMAX DRC 4-Button Color Change Kit | CKDNK-40y |
| GreenMAX DRC 8-Button Color Change Kit | CKDNK-80y |
| GreenMAX DRC 1-Button Engraving Kit | CKDNK-1Ey |
| GreenMAX DRC 2-Button Engraving Kit | CKDNK-2Ey |
| GreenMAX DRC 4-Button Engraving Kit | CKDNK-4Ey |
| GreenMAX DRC 8-Button Engraving Kit | CKDNK-8Ey |

*Replace y to indicate color: (W) = White, (I) = Ivory, (T) = Light Almond, (G) = Gray (R) = Red, (E) = Black.
Wallplate purchased separately, recommended Leviton Cat. No. 80301 screwless wallplates
For antimicrobial options, see GreenMAX DRC Digital Keypads on page 69

## Load Control Devices

| Wireless Load Control Devices | |
|---|---|
| **Description** | **Cat. No.** |
| Wireless 20A ON/OFF Switching Power Pack | LU20S-DNW |
| Wireless 10A 0-10V Dimming Power Pack | LU107-DNW |
| Wireless 800W Phase Cut Dimming Power Pack | LU04P-1NW |
| Wireless 10A ON/OFF Wall Switch | ZS10S-D0Z |
| Wireless 0-10V Wall Dimmer, 120-277V | ZS057-D0Z |
| Wireless 10A 0-10V Wall Dimmer, 347V | ZS057-30Z |
| Wireless 24V 0-10V Wall Dimmer | ZS057-ALZ |
| Multi-Way Remote | DLDNK-xxx |
| Zigbee Controlled Receptacle | ZSTLR-1HW |

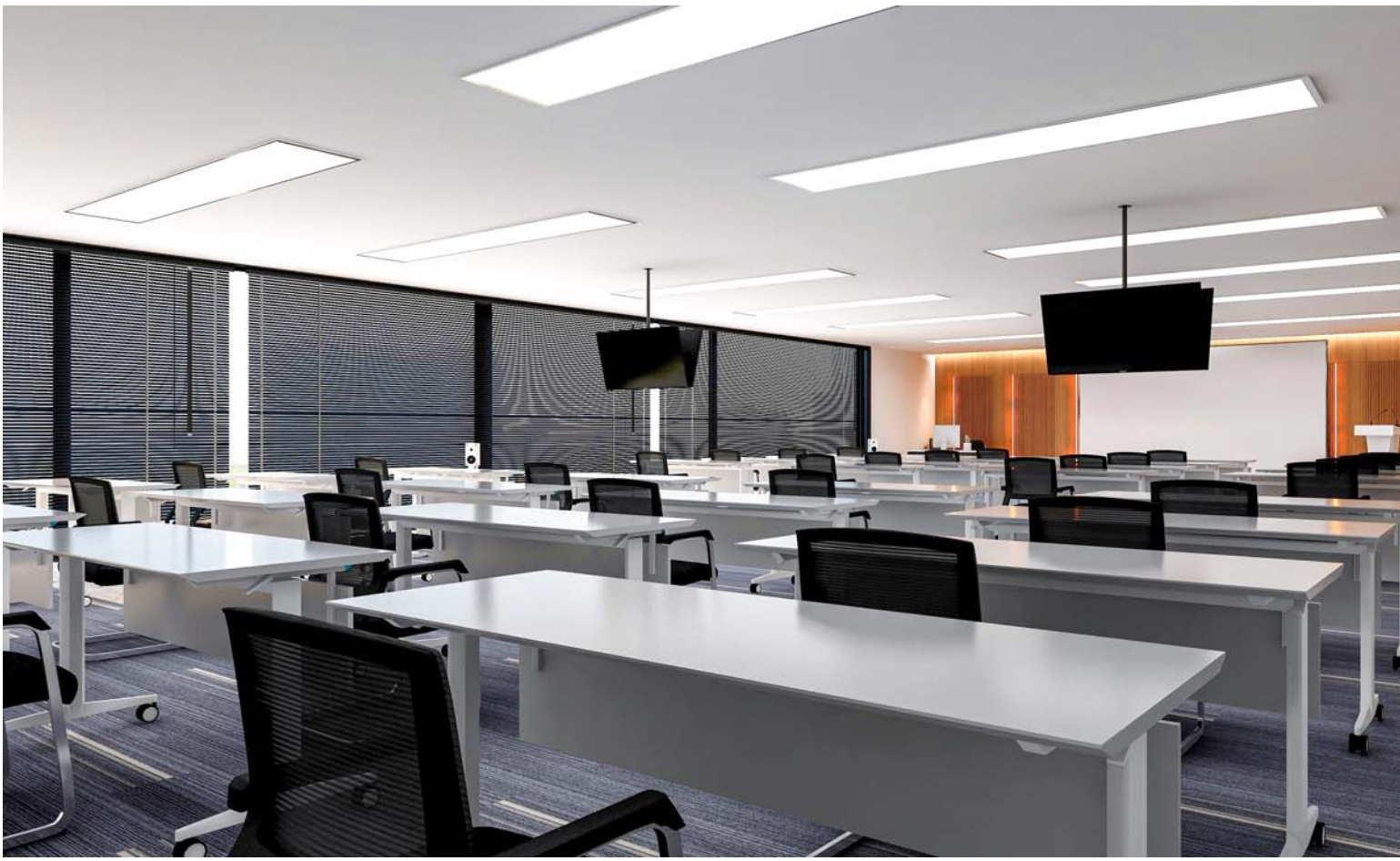
## Integrated Fixtures by Leviton

| Integrated Fixtures by Leviton | |
|---|---|
| **Description** | **Cat. No.** |
| VISCOR | ALRM/ALRS/ALRB/LRTG/LRTH/ LCOMN SQ/LMEZ |
| ConTech® Lighting | R4NCIE/R4SQNCIE/ R6NCIE |
| Birchwood Lighting | JAKE-LED |
| Intense® Lighting | SS4G4DR |

*Contact factory for additional information

## Occupancy Sensor & Photocell

| Zigbee PIR Occupancy Sensor & Photocell | |
|---|---|
| **Description** | **Cat. No.** |
| Zigbee PIR Occupancy Sensor & Photocell, 1,500 sq ft | ZC015-BIW |
| Optional 24VDC Power Adapter | SLI24-000 |



# DIN Rail Enclosures

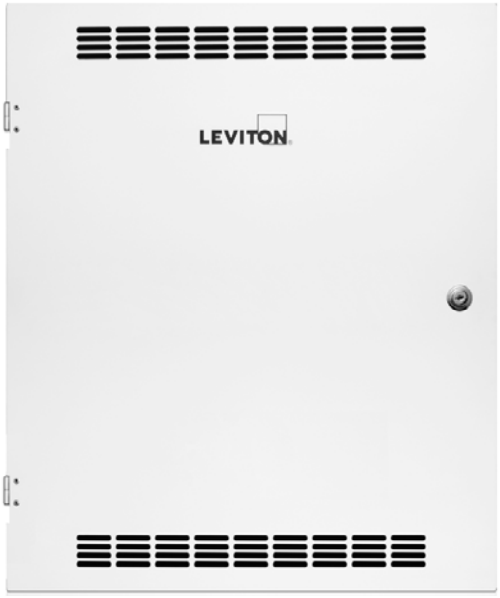
Leviton DIN Rail Enclosures are agency-listed cabinets designed to accept any equipment installable to ANSI-standard DIN rail. This allows highly flexible installations which can be custom-tailored to your specific application without the need for expensive custom cabinetry. The Enclosures consist of a back box cabinet with DIN rails and wiring space, a dead front cover that hides the wiring, and a locking cover. The DIN Rail Enclosures are well suited for the GreenMAX DRC Room Control System and Omni-Bus lines of DIN rail mount controls, as well as DIN rail VerifEye meters, and can be provided as either an empty enclosure for field installation of equipment or as factory pre-configured* enclosures with pre-installed modules and/or wiring for easy installation.

## DIN Rail Cabinets

| Room Controller | |
|---|---|
| **Description** | **Cat. No.** |
| DIN Rail Rack Mount Enclosure, small, 14x10 in with (1) 12.9-in rail | DINRK-001 |
| DIN Rail Rack Mount Enclosure, medium, 21x25 in with (3) 13.7-in rails | DINRK-A03 |
| DIN Rail Rack Mount Enclosure, large, 25x48 in with (5) 19.5-in rails | DINRK-A06 |

*Optionally pre-configured at the factory. Contact Leviton Quotes (LCquotes@leviton.com) for ordering information.

DINRK-001




DINRK-A03

# Integrated Fixture Controls

Leviton integrated controls offers customers a complete end-to-end professional lighting and wireless control solution. This streamlined solution allows for greater freedom of design in almost any space. Select the integrated controls that best fits your needs—choose from a simple standalone sensor like Solo or for more advanced lighting control strategies, use Intellect Wireless.

### Solo Sensor

- 0-10V dimming
- Occupancy sensing
- Daylight harvesting
- Parital-ON/Partial-OFF
- IR Remote configurable
- 8'-10' mounting height
- IP20 rated
- Can be used to comply IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 dimming, occupancy/vacancy sensing and daylight harvesting requirements

### Solo High Bay PIR Occupancy Sensor with Integral Photocell

- 0-10V dimming with multi-level control
- Partial-OFF
- Selectable daylighting target
- IP65 Rated
- Configured using DIP switches or optional IR Remote
- Remote stores and transmits sensor profiles to other devices if configuration requirements are the same
- Can be used to comply IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 dimming, occupancy/vacancy sensing and daylight harvesting requirements

### Solo Sensor IR Remote

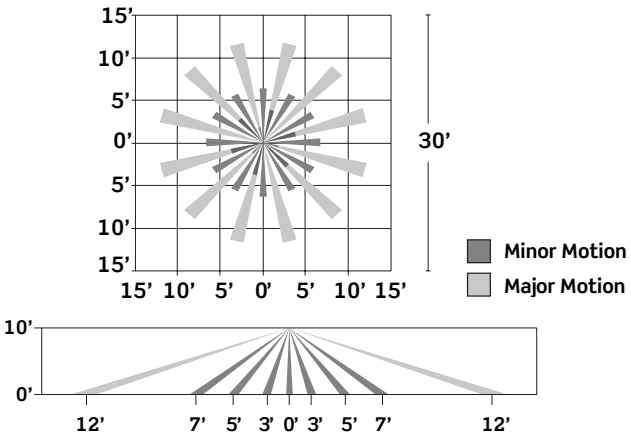
- Use to configure sensor settings for the ZLS05 only

### Solo Sensor IR Remote

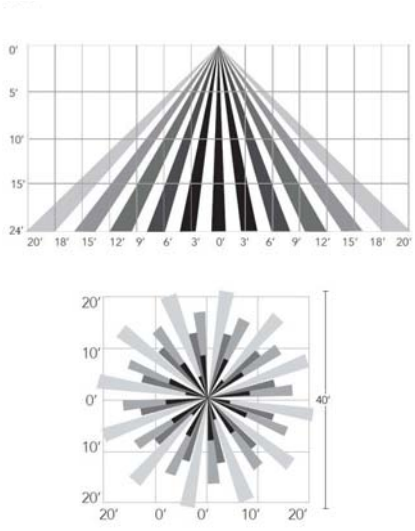
- Use to configure sensor settings for the ZLS10-IxW only

| Solo Sensors | |
|---|---|
| **Description** | **Cat. No.** |
| Solo PIR and Daylight Harvesting Sensor, fixture embedded. 12-24VDC input voltage, 30mA sinking; requires 0-10V dim-to-off driver | ZLS05-ILW |
| Optional Solo Sensor IR Remote to be used with ZLS05-ILW only | ZLS0R-RA1 |
| Solo PIR Sensor, fixture integrated. 120-277VAC, 50/60Hz; controls 0-10VDC LED drivers or dimming ballasts | ZLS10-IDW |
| Solo PIR Sensor, fixture integrated. 12-24VDC, 0-10V, max 25mA sinking current; mounting height | ZLS10-ILW |
| Optional Solo Sensor IR Remote, for use with ZLS10-IDW, ZLS10-ILW only | ZLS0R-RC1 |

## Field of View, in feet




ZLS05




ZLS10

## Smart Fixture Mount Sensors

### Internal Smart Fixture Mount Sensors

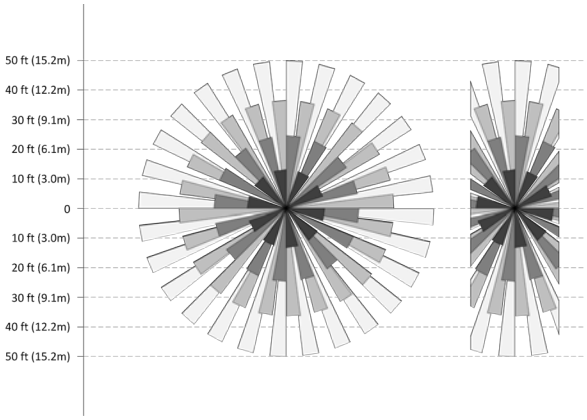
- PIR Occupancy Detection and Daylight Harvesting
- Low voltage
- 0-10V dimming
- Partial-OFF

### End Mount Fixture Mount Sensors

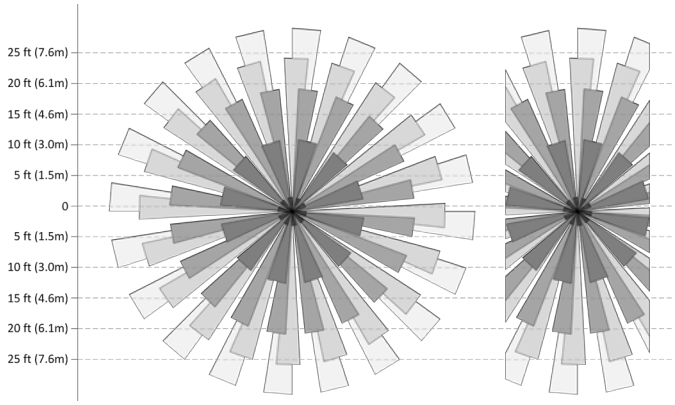
- Designed for mid to high-bay applications
- PIR occupancy and Daylight hold-OFF
- Line or low voltage model
- 0-10V dimming
- IP65 rated for wet and cold locations

| Smart Integrated Fixture Mount Sensors | |
|---|---|
| **Description** | **Cat. No.** |
| Smart Sensor with Photocell, Light Fixture Integrated, PIR, Occupancy Sensor, 120-277VAC, 50/60 Hz, 8-20 FT and 20-40 FT Lens Included | ZLD1Z-I0W |
| Smart Sensor with Photocell, Light Fixture Integrated, PIR, Occupancy Sensor, 120-480VAC, 50/60 Hz, 8-20 FT and 20-40 FT Lens Included | ZLDUZ-I0W |
| Dimming Daylight Harvesting PIR Occupancy Sensor; End/Fixture Mount; 120-277VAC 50/60 Hz; IP66 Rating for High and Low-Temp, Water Tight, Indoor/Outdoor; Single Zone 0-10V Dimming, 120-277VAC single-pole 5A relay; 8-20' Lens and 20-40' lens included | OFD1Z-ISW |
| Dimming Daylight Harvesting PIR Occupancy Sensor; End/Fixture Mount; Universal Voltage 120-480VAC 50/60 Hz; IP66 Rating for High and Low-Temp, Water Tight, Indoor/Outdoor; Single Zone 0-10V Dimming, 120-347VAC 2-pole 5A relay; 8-20' Lens and 20-40' lens included | OFDUZ-ISW |

## Field of View, in feet




High Bay Lens at 40'




Low Bay Lens at 20'

# Intellect Wireless

## Intellect Components

### GreenMAX Wireless Keypad Room Controller

- Manages all devices in the room to coordinate energy management functions within the room including 0-10V dimming, switching, and phase cut dimming while meeting energy code requirements

### Power Control Modules

- Operates as a power pack and delivers relay power and 0-10V control to set dimming levels
- Linear models can be used as a UL924 emergency bypass device by connecting it to the Emergency Sense Pigtail (ZL027-0ES) with the cable provided

### Sensor Control Module

- Integrates PIR occupancy/vacancy sensing and photocell technology for daylight harvesting
- Options available for embedding in fixtures or mounting remotely in ceilings

### GreenMAX DRC App

- The only setup tool needed
- Allows for wireless room configuration, monitoring and remote control from an Android or iOS smart device

### Intellect Wireless Integrated Fixture Sensor and Controller

- PIR Occupancy and Light Level Sensor or Controller
- Low voltage
- Installs into any standard 1/2" knock-out
- Integrated Fixture Controllers mount adjacent to driver in wiring compartment
- 0-10V dimming or DALI
- Low voltage
- 0-10V, DALI or tunable

## Features and Benefits

**Wireless System Features**

- Programmable using any Bluetooth-enabled Android or iOS smart device using the GreenMAX™ DRC App
- Multi-location switching
- Occupancy detection — minor motion coverage area is equivalent to fixture coverage area
- Multi-zone daylight harvesting — no limit to number of zones
- Programmable GreenMAX™ DRC Keypad Room Controller buttons — assignable with one of the following behaviors:
  - Scene: collection of Groups at a level
  - Toggle: button turns an individual group ON/OFF
  - Room ON: all lights go to their target level or to MAX if they are not in a daylighting zone -Room OFF - all lights go OFF
  - Raise: lights get incrementally brighter from their current position; lights that are off stay off
  - Lower: lights get incrementally dimmer from current position; lower will only dim the lights to their minimum value
- User controlled fixture Groups — no limit to number of Groups
- Integral scene support — scenes are collections of Groups, each at their own level, programmed with a fade time and recalled from a pushbutton or the app

**Easy Energy Savings**

- Integrated fixtures offer essential out-of-the-box functionality, self-contained solutions that can be used to comply with IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 dimming, occupancy/vacancy sensing and daylight harvesting requirements

**Easy Specification, Layout and Design**

- Each Intellect-enabled fixture integrates a sensor or controller which wirelessly communicates with the Keypad Room Controller and other Intellect devices within the space
- No separate controls layout required
- No additional gateway or hub needed

**Easy Installation**

- Plug-and-play operation
- Ladderless commissioning via the Bluetooth-enabled GreenMAX™ DRC App — the only setup tool needed

**Easy Operation**

- Configure, monitor and control the system from an Android or iOS smart device the with the GreenMAX DRC App
- Every fixture is controllable and not tied to physical zoning
- Highly robust, fully secure, self-healing, mesh network
- Easily program the Keypad Room Controller to meet the lighting needs of any space

# Intellect Wireless

## Digital Keypads

| Description | Cat. No. |
|---|---|
| GreenMAX DRC Digital Keypad | DRKDN-C1W |
| GreenMAX DRC Digital Keypad | DRKDN-C2W |
| GreenMAX DRC Digital Keypad | DRKDN-C4W |
| GreenMAX DRC Digital Keypad | DRKDN-C8W |
| GreenMAX DRC 1-Button Color Change Kit | CKDNK-10y* |
| GreenMAX DRC 2-Button Color Change Kit | CKDNK-20y |
| GreenMAX DRC 4-Button Color Change Kit | CKDNK-40y |
| GreenMAX DRC 8-Button Color Change Kit | CKDNK-80y |
| GreenMAX DRC 1-Button Color Change Kit with Engraving | CKDNK-1Ey |
| GreenMAX DRC 2-Button Color Change Kit with Engraving | CKDNK-2Ey |
| GreenMAX DRC 4-Button Color Change Kit with Engraving | CKDNK-4Ey |
| GreenMAX DRC 8-Button Color Change Kit with Engraving | CKDNK-8Ey |
| Engraved Wallplate | WPDN0-1EX* |

*Replace y and x to indicate color: (W) = White, (I) = Ivory, (T) = Light Almond, (G) = Gray (R) = Red, (E) = Black.
**Note:** Wallplates purchased separately, recommend Leviton Cat. No. 80301 screwless wallplates

## Power Control Modules

| Description | Cat. No. |
|---|---|
| Power Control Module | ZL027-N0W |
| Linear Power Control Module | ZL027-DLE |
| Emergency Sense Pigtail for use with Linear Power Control Module | ZL027-0ES |

## Sensor Control Modules

| Description | Cat. No. |
|---|---|
| PIR Sensor Control Module with Integrated Photocell | ZL00J-D0W |
| PIR Sensor Head Module with Integrated Photocell | ZL00J-T0W |

## Cables

| Description | Cat. No. |
|---|---|
| Extension cable, 12” | ZLAEX-012 |
| Extension cable, 18” | ZLAEX-018 |
| Extension cable, 24” | ZLAEX-024 |
| Extension cable, 30” | ZLAEX-030 |
| High Temperature Extension Cable, 18” | ZLAEX-H15 |
| High Temperature Extension Cable, 48” | ZLAEX-H48 |
| High Temperature Extension Cable, 96” | ZLAEX-H96 |

## Integrated Fixture Sensor and Controller

| Description | Cat. No. |
|---|---|
| Intellect Wireless Intelligent Fixture Controller for mounting in 1/2” knock-out. Occupancy and Light Level Sensor, 8-10’ mounting height. 0-10V Output. | ZL07S-N00 |
| Aux port or external power supply powered from +12-24Vdc supply. Intellect Wireless Intelligent Sensor for mounting in 1/2” Knock-Out. Occupancy and Light Level Sensor, 8-10’ mounting height. DALI Output, DALI Powered | ZL0DS-N00 |
| Intellect Wireless Intelligent Fixture Controller for mounting in 1/2” Knock-Out. No Sensor, 0-10V Output. Aux port or external power supply powered from +12-24vdc supply | ZL070-N00 |
| Intellect Wireless Intelligent Fixture Controller for mounting in 1/2” Knock-Out. No Sensor, DALI Output, DALI Powered | ZL0D0-N00 |
| Intellect Wireless Intelligent Fixture Controller for mounting adjacent to driver in wiring compartment. No sensor, 0-10V Output. Aux port or external power supply powered from +12-24Vdc supply. | ZL070-B00 |
| Intellect Wireless Intelligent Fixture Controller for mounting adjacent to driver in wiring compartment. No sensor, 2-Channel 0-10V Output. Aux port or external power supply powered from +12-24Vdc supply. | ZL070-B20 |
| Intellect Wireless Intelligent Fixture Controller for mounting adjacent to driver in wiring compartment. No sensor, DALI output, DALI powered. | ZL0D0-B00 |
| Emergency Sense Pigtail for use with Intellect Linear Control Module (ZL027-DLE) | ZL027-0ES |

## General Lighting Fixtures

Leviton general lighting fixtures offer a self-contained lighting and control solution that saves on installation time and costs. The general lighting fixtures offer design build contractors an opportunity to convert their fluorescent projects to LED for a complete integrated lighting and controls solution at one price. These self-contained fixtures can be shipped directly to a jobsite for a one-and-done solution for new construction and retrofits.

### Features and Benefits

- Self-contained lighting and control solution saving on installation time and costs
- The general lighting fixtures offer design build contractors an opportunity to convert their fluorescent projects to LED for a complete integrated lighting and controls solution at one price
- Provide luminaire level lighting control (LLLC) by offering two integrated control options: Solo or Intellect Wireless
- Choose the Solo Sensor for:
  - When a straightforward, standalone solution for 0-10V dimming, PIR occupancy sensing and daylight harvesting applications are needed, FOV
  - Easy installation and out-of-the-box operation
  - No commissioning required
  - Partial-OFF controls
  - Configure sensor settings with IR remote as the needs of the space changes
- Select Intellect Wireless for:
  - When advanced controls strategies are needed such as energy management and meeting complex energy code requirements
  - Wireless communication between integrated sensors and the GreenMAX DRC Wireless Keypad Room Controller
  - Add additional Leviton wireless devices for a full suite of lighting control behaviors and load controls
  - No additional gateway or hub needed
  - Configurable with the GreenMAX DRC App

**General Lighting Fixtures by Leviton Lighting Brands**

| Cat. No. | Description |
|---|---|
| **VISCOR** | |
| ALRM | LED ALLURA Linear Pendant Type M; premium-grade, pendant-mount, bi-directional luminaire |
| ALRA | LED ALLURA Linear Pendant Type A; premium-grade, pendant-mount, bi-directional luminaire |
| ALRB | LED ALLURA Linear Pendant Type B; premium-grade, pendant-mount, bi-directional luminaire |
| LRTG | Premium-grade, recessed, lay-in T-Bar luminaire |
| LRTH | LED recessed, lay-in coffered T-Bar troffer |
| LMEZ | LED slim profile linear luminaire |
| LCOMN SQ | LED Commercial Type N Square; commercial-grade, LED strip luminaire |
| **ConTech Lighting** | |
| R4NCIE | 4" Integrated LED Universal New Construction Downlight |
| R4SQNCIE | 4" Square Integrated LED Universal New Construction Downlight |
| R6NCIE | 6" LED Recessed Downlight; Universal New Construction Downlight |
| **Birchwood Lighting** | |
| JAKE-LED | Recessed Linear Luminaire |
| **Intense Lighting** | |
| SS4G4DR | 4" LED Round Downlight |

ALRM/ ALRA/ ALRB

LRTG/LRTH

LMEZ

LCOMN SQ

R4NCIE

R6NCIE

JAKE-LED

SS4G4DR

# VerifEye™ Submetering Solutions

## SMARTer Metering. SMARTer Control. REAL Savings.

VerifEye™ delivers a comprehensive line of leading-edge submeters, communication products, and software solutions as the key building blocks to help you better manage costs and conserve energy. The cost-effective scalability and integration provide you with timely solutions that can be expanded for future needs. Submetering expertise, service and support from start to finish from a name you can trust.

# VerifEye Submetering Solutions

## The Benefits of Submetering

VerifEye™ delivers a comprehensive line of leading-edge submeters, communication products and software solutions as the key building blocks to help you better manage costs and conserve energy.

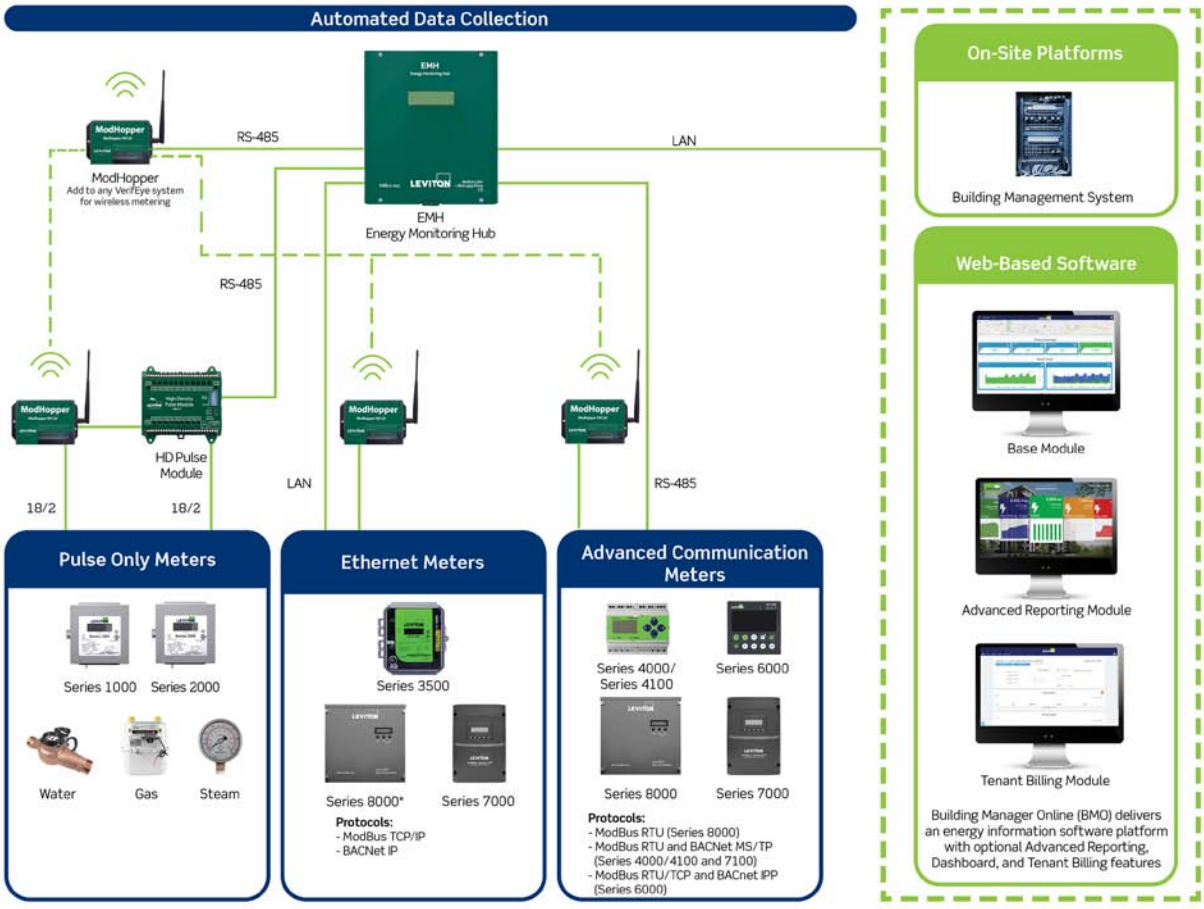
From tenant billing to energy measurement & verification (M&V) software solutions, VerifEye offers cost-effective scalability and integration to provide you with the solution you need today that can be expanded in the future. This seamless solution enables smart metering, meets code compliance requirements and simplifies the complexities of allocating energy costs and billing tenants. Building owners and managers can minimize usage of electric, water, gas and other utilities for long-term cost savings. Organizations that monitor and manage energy usage are better able to compete, to achieve real savings, and to meet code compliance and building efficiency standards such as LEED, 2022 California Title 24, ASHRAE 90.1, New York Local Law 88 and 133, and Seattle City Code.

For additional energy savings, combine VerifEye with Leviton lighting controls for a complete energy management solution from a single source.

**VerifEye delivers accurate information for:**

- Load profiling & benchmarking
- Tenant billing/cost allocation
- Measurement & verification (M&V)
- Energy conservation programs
- Building codes and standards compliance
- Green initiatives including LEED certification
- Federal government energy program compliance
- Building management systems (AMR/BMS/EMS) integration

## VerifEye System Architecture



# VerifEye Comparison Guide

Mini Meter Kits

Mini Meter Kits with AMR

| Multi-Family Residential | | |
|---|---|---|
| **Specifications** | **Mini Meter™ Kits** | **Mini Meter Kits with AMR** |
| **kWh Meter** | | |
| **Phase/Wiring** | 1PH/3W and Split Phase | |
| **Voltage Configurations** | 120/208/240 | |
| **Amperages** | 100-200A | 200A |
| **Measuring Parameters** | kWh | |
| **Communications Protocol (Standard)** | Isolated Pulse Output | Embedded wireless transmitter |
| **Current Transformers Options** | Split Core<br>Solid Core | Solid Core |
| **Enclosure Options** | **OEM Module**<br>**Indoor** Plastic Flush Mount NEMA 1<br>**Outdoor** NEMA 4X<br>**MMU** NEMA 4X | **Indoor** Flush Mount<br>**Indoor** Surface Mount |
| **Display Type** | LCD or Mechanical Counter | LCD |
| **Accuracy** | C12.10 +/- 0.5% with paired CTs | C12.20 / 0.5% with paired CTs |
| **Data Storage** | Last Reading - Cumulative | |

*With potential transformer — consult factor for availability

# VerifEye Comparison Guide


Series 8000


Series 7000, 7100


Series 7200, 7300

| | Residential/Commercial | | |
|---|---|---|---|
| **Specifications** | **Series 8000 High Density Multi-Circuit Meter** | **Series 7000 and 7100 Advanced Branch Circuit Monitor, Advanced 3-Phase Meters** | **Series 7200 and 7300 Virtual Element Advanced Branch Circuit Monitors** |
| | **kWh Meter** | | **kWh Meter with Demand** |
| **Phase/Wiring** | 1PH 2W<br>1PH 3W WYE<br>3PH 3W Delta<br>3PH 4W WYE | 1P/2W<br>2P/3W<br>3P/4W<br>3P/3W Delta | 1P/2W<br>2P/3W<br>3P/4W (WYE)<br>3P/3W (Delta) |
| **Voltage Configurations** | 120/208<br>120/240<br>277/480<br>480* | 90-346 Volts AC<br>Line-to-Neutral,<br>600V Line-to-Line | 90-347 Volts AC<br>Line-to-Neutral<br>600V Line-to-Line, CAT III<br>One voltage reference input |
| **Amperages** | 100-5000A | 50-4000A | |
| **Measuring Parameters** | kWh Delivered and Received<br>kVarh Delivered and Received<br>VAR<br>PF<br>Peak Demand<br>Present Demand<br>Volts<br>Amps<br>Watts | Volts, Amps, kW, kVAR, kVA,<br>aPF, dPF, kW demand, kVA demand,<br>Import (Received), kWh,<br>Export (Delivered), kWh, Net kWh,<br>Import(Received) kVAh,<br>Export (Delivered) kVAh, Net KVAh,<br>Import (Received),kVARh, Export (Delivered), kVARh, Net kVARh,<br>THD Theta, Frequency | Volts<br>kW<br>aPF<br>kWh<br>All parameters for each phase and system total |
| **Communications Protocol (Standard)** | Modbus TCP<br>Modbus RTU (RS-485)<br>BACnet IP<br>Ethernet | Modbus RTU<br>Modbus TCP<br>BACnet MS/TP<br>BACnet IP<br><br>Integrated USB port may be used for local configuration | RS485<br>Ethernet<br>Modbus RTU<br>Modbus TCP<br>BACnet MS/TP<br>BACnet IP<br><br>Integrated USB port may be used for local configuration |
| **Current Transformers Options** | Split Core<br>Solid Core | Split Core<br>Solid Core<br>Rogowski Coil | Split Core<br>Solid Core<br>Rogowski Coil |
| **Enclosure Options** | **Indoor** JIC Steel NEMA1 | **Indoor** Plastic NEMA 1 or<br>Embedded Panel Mount — no enclosure | |
| **Display Type** | Local LCD, Scroll | Local LCD, Scroll Buttons | |
| **Accuracy** | C12.20 +/- 0.5% | C12.20 / 0.2% | 0.2% ANSI C12.20-2010 Class 0.2 |
| **Multiple Meter Configurations** | 3PH: 8x3<br>1PH 3W: 12x2, 9x2, 6x2, 3x2<br>1PH: 24x1 | **Single 3-Phase Meters:**<br>3PH, 2PH, 1PH: x1<br>**12 Inputs Configurable:**<br>3PH: 4 x 3<br>2PH: 4 X 2<br>1PH: 12 X 1<br>**24 Inputs Configurable:**<br>3PH: 8x3 / 2PH 8x2<br>1PH: 24x1<br>**48 Inputs Configurable:**<br>3PH: 16x3 / 2PH: 16x2<br>1PH: 48x1 | 48 Inputs Configurable: Up to 24 virtual meters configured in any combination of 1-pole, 2-pole or 3-pole loads |
| **Data Storage** | Last Reading - Cumulative Data in 15 min Intervals | Last Reading — User Selectable | |

# VerifEye Comparison Guide


Series 1000 Indoor


Series 1000 Outdoor


Series 2000 Indoor


Series 2000 Outdoor


Series 3500 Indoor


Series 3500 Outdoor

| Commercial | | | | |
|---|---|---|---|---|
| | **Series 1000 Single Phase Meter Kits** | | **Series 2000 Three Phase Meter Kits** | **Series 3500 Multi-Function Ethernet Meter Kits** |
| | **kWh Meter with Demand** | | | **Advanced kWh Meter with Communication Protocols** |
| **Phase/Wiring** | 1PH 2W | 1PH 3W | 3PH 4W WYE | 3PH 3W Delta<br>3PH 4WYE |
| **Voltage Configurations** | 120<br>277 | 120/208<br>120/240<br>277/480 | 120/208<br>277/480 | Universal Voltage<br>(120-480V) |
| **Amperages** | 100-800A | | 100-1200A<br>100, 200, 400, 800, 1200 | 100-5000A<br>MAX L-N Voltage 277VAC |
| **Measuring Parameters** | kWh<br>Demand-Peak and Current (Standard on S2000, Optional on all others) | | | kWh<br>kW (peak demand reset)<br>Meter Totals: kVAR, kVA, Power Factor & kW<br>By Phase: Volts, Watts, Amps, Power Factor, Interval Data |
| **Communications Protocol (Standard)** | Isolated Pulse Output, 10WH or 1000WH Pulse | | | Isolated Pulse Output<br>Modbus TCP/IP<br>BACnet IP |
| **Current Transformers Options** | Split Core<br>Solid Core | | | |
| **Enclosure Options** | **Indoor** JIC Steel NEMA 1<br>**Outdoor** NEMA 4X | | | |
| **Display Type** | Local LCD | | | Local LCD, Scroll Buttons |
| **Accuracy** | C12.10 and C12.20 +/- 0.5% | | | C12.10 +/-0.5% |
| **Data Storage** | Last Reading - Peak Demand and Instantaneous Demand - Standard on S2000 Indoor Kits | | | Last Reading - Cumulative Peak Demand with Key Reset Data in 15 min Intervals |

# VerifEye Comparison Guide

**Series 4000 and 4100 Indoor**

**Series 4000 and 4100 Outdoor**

| Commercial | | |
|---|---|---|
| | **Series 4000 Industrial Modbus Meter Kits** | **Series 4100 Industrial Modbus RTU Bidirectional Meter Kits** |
| **kWh Meter** | | |
| **Phase/Wiring** | 3PH 3W/4W<br>WYE/Delta | 3PH 3W/4W<br>WYE/Delta |
| **Voltage Configurations** | Universal Voltage (90-600) L-N Voltage 347VAC | |
| **Amperages** | Split Core: 100, 200, 400, 800A<br>Rogowski: 50-5000A | |
| **Measuring Parameters** | Series 4000: kVARh, kW, kVAR, kVA,<br>Voltage L-L, L-N, Current, Power Factor, Frequency<br>Series 4100: kW, kVA and kVAR<br>Power factor: 3 phase average & per phase<br>Present power demand: Real (kW), reactive (kVAR) and apparent (kVA)<br>Parameters are both delivered and received for the S4100 Meter | |
| **Communications Protocol (Standard)** | Modbus/RTU | Modbus/RTU w/Pulse<br>Output or BACnet MS/TP with Pulse Input |
| **Current Transformers Options** | Split Core .333V secondary output only<br>Rogowski Coil: lengths available in 12", 18" and 24" | |
| **Enclosure Options** | Indoor DIN Rail Mount<br>Outdoor NEMA 4X | |
| **Display Type** | LCD, Scroll Buttons | |
| **Accuracy** | C12.20 / 0.2% | |
| **Data Storage** | Last Reading - Present and Peak Demand for kW and kVAR | |

# VerifEye Mini Meter Kits

**Equitable Tenant Billing**

Some multi-tenant residential properties include energy costs in rental fees and generally charge tenants for energy based on the square footage occupied. To be truly equitable, tenants should pay only for what they actually use. With Leviton VerifEye Mini Meters, building managers can easily and fairly track and allocate energy usage costs 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.

## Features and Benefits

- Kits include meter, specified enclosure and required current transformers
- kWh Meter
- 100-200 Amps
- Pulse Output — standard
- Available in indoor flush mount and surface mount enclosures and NEMA 4X outdoor individual meter enclosures
- Select surface mount and flush mount models include built in tamper proof switch or built in wireless AMR and temperature sensing capabilities
- Revenue grade accuracy: 0.5% accuracy class
- Use with solid core CTs to achieve 0.5% accuracy — also available with split core CTs
- Up to three sets of CTs per phase can be paralleled per meter with no multipliers
- Components of Mini Meter Kits are UL/cUL Listed Energy Usage Monitor per CCN FTRZ

## Mini Meter Kits

### Mini Meter Kits — Indoor Flush Mount Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 120/208V 3W or 120/240V 1PH 3W (Split Phase) | 100A | 2 Solid CTs | MK240-1SW |
| | 200A | | MK240-2SW |

### Mini Meter Kits — 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 | | MO240-2SW |
| 120/208V 2PH 3W or 120/240V 1PH 3W (Split Phase) | 100A | 2 Split CTs | MO240-01W |
| | 200A | | MO240-02W |

### Mini Meter Kits — Indoor Surface Mount Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 120/240 1PH/3W Split Phase, 120/208 2PH/3W | 200A | 2 Solid CTs | 6PSMT-C02 |

### Mini Meter Kits — LCD Model Meter (No Enclosure)

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 120/240 1PH/3W Split Phase, 120/208 2PH/3W 0.1kWh | 100A | 2 Solid CTs | MDNCT-1SC |
| | 100A | 2 Split CTs | MDNCT-1SP |
| | 200A | 2 Solid CTs | MDNCT-2SC |
| | 200A | 2 Split CTs | MDNCT-2SP |
| 120/240 1PH/3W Split Phase, 120/208 2PH/3W 1kWh | 100A | 2 Solid CTs | MDTCT-1SC |
| | 100A | 2 Split CTs | MDTCT-1SP |
| | 200A | 2 Solid CTs | MDTCT-2SC |
| | 200A | 2 Split CTs | MDTCT-2SP |

**NOTE:** All kits include meter and Current Transformers (CTs)

Indoor Flush Mount Mini Meter


Outdoor Mini Meter

## Mini Meter Kits

| Dual Element Mini Meter Kits — With Integrated Wireless AMR* | | | |
|---|---|---|---|
| **Voltage** | **Amps** | **CTs Included** | **Cat. No.** |
| **Dual Element Mini Meter** | | | |
| 120/240 1PH/3W Split Phase, 120/208 2PH/3W (includes Time of Use (TOU**) enabled kWh Wireless AMR Transceiver) | 200A | 2 Solid Core CTs | MDTFW-2SC |
| 120/240 1PH/3W Split Phase, 120/208 2PH/3W (includes Time of Use (TOU**) enabled kWh Wireless AMR Transceiver | 200A | 2 Solid Core CTs | MDTSW-2SC |

**NOTE:** All kits include meter, specified enclosure and Current Transformers (CTs).
*For a complete wireless Automatic Meter Reading (AMR) system, data transceivers and other wireless network components (DCAPs and Repeaters) are required as dictated by building construction.
**TOU = Time of Use, providing 15-minute time-stamped kWh interval data

Indoor Surface Mount Mini Meter

Mini Meter with Transceiver

MDTSW-2SC

# VerifEye Series 8000 Multiple Point High-Density Smart Meters

VerifEye Series 8000 Multiple Point High Density Meters are designed to meter high-density applications such as multi-tenant office and residential buildings, medium-sized retail stores, and institutional facilities. For easy data accessibility, the Series 8000 design is based on an open protocol network to transmit data over ModBus and BACnet, and Ethernet. Combining revenue-grade electrical submetering with building automation communications technology, the Series 8000 complies with all regulatory ele

### Features and Benefits

- Allows for revenue grade metering of up to
- 24 individual circuits in one device
- Inputs are configurable as seen below:
  - 8 circuits, 3 phase loads
  - 12 circuits, 2 phase loads
  - 24 circuits, 1 phase loads
- 100-5,000 Amp current transformers
- Native communications protocol — ModBus TCP, ModBus RTU (RS-485) and BACnet IP standard
- Measures kilowatt hours, kW demand, volts and amps
- Interval and net metering
- Two onboard pulse input channels available for co-located meters with contact closures
- This platform is both CA Type and NYPSC Approved

| Series 8000 Multiple-Point High Density Smart Meter | | |
|---|---|---|
| **Voltage** | **Description** | **Cat. No.** |
| **Multi-Family Residential** | | |
| 120/208/240V | Phase Config 3x2 with Wiring Harness | S8120-032 |
| | Phase Config 6x2 with Wiring Harness | S8120-062 |
| | Phase Config 9x2 with Wiring Harness | S8120-092 |
| | Phase Config 12x2 with Wiring Harness | S8120-122 |
| 120/208V | Phase Config 8x3, 12x2, 24x1 with Terminal Strips | S8UTS-241 |
| | Phase Config 8x3, 12x 2, 24x1 with Wiring Harness | S8UWH-241 |
| **Commercial and Residential** | | |
| 277/480V | Phase Config with 8x3, 12x2, 24x1 with Terminal Strips | S277TS-241 |
| | Phase Config with 8x3, 12x2, 24x1 with Wiring Harness | 277WH-241 |


Series 8000 Multiple-Point High Density Meter

# VerifEye Series 7000 and 7100 Advanced Branch Circuit Monitor

The VerifEye Series 7000 and 7100 Advanced Branch Circuit Monitor is a cost-effective solution for electrical load management. The Series 7000 and 7100 platform is ideal for high density, branch circuit monitoring applications in both new construction and retrofit applications. The Series 7000 and 7100 monitors up to 48 branch circuits with one single meter board.

## Features and Benefits

- 24/48 unit input versions configurable as follows:
  - 24/48 Single Pole Meters
    - 24/48 Single Pole Meters -or-
    - 8/16 Two Pole Meters -or-
    - 8/16 Three Pole Meters
- 12 unit Input versions configurable as follows:
  - 12 Single Pole Meters -or-
    - 4 Two Pole Meters -or-
    - 4 Three Pole Meters
- Consult factory for any other configuration options
- Reference voltage inputs
  - 12 Input Version—one set of three phase reference inputs
  - 24 or 48 Input Versions—two sets of three phase reference inputs
- Line powered from 90-600V, phase-to-phase
- Meets ANSI & IEC metering system accuracy requirements including branch CTs
- Supports solid core, split core and Rogowski Coil CTs
- Meter board features:
  - Easy access terminals for CT wiring, removable connectors
  - Available with or without display embedded options
- Reports volts, amps, power, demand and energy for each circuit
- Limited 5-year warranty

## Series 7000 and 7100 Advanced Branch Circuit Monitor

| Voltage | Description | Cat. No. |
|---|---|---|
| 120V-480VAC | Series 7000 Embedded Branch Circuit Monitor Platform, 12 inputs with display | 70D12-000 |
| | Series 7000 Embedded Branch Circuit Monitor Platform, 12 inputs, no display | 70N12-000 |
| | Series 7100 Branch Circuit Monitor, 12 Inputs with display, NEMA 1 enclosure | 71D12-000 |
| | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 24 inputs, LCD display | 70D24-000 |
| | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 24 inputs, no display | 70N24-000 |
| | Series 7100 Dual Voltage, Branch Circuit Monitor, 24 inputs, LCD display, NEMA 1 enclosure | 71D24-000 |
| | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, LCD display | 70D48-000 |
| | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, no display | 70N48-000 |
| | Series 7100 Dual Voltage, Branch Circuit Monitor, 48 inputs, LCD display, NEMA 1 enclosure | 71D48-000 |

## Compatible CT Options*

| Amp | Description | Cat. No. |
|---|---|---|
| 100 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV01-K17 |
| 200 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV02-K17 |
| 50 | Split Core CT, 333mV, 0.4" | CTV5X-WA4 |
| 100 | Split Core CT, 333mV, 1.6" x 2.1" | CTV01-KD0 |
| 200 | Split Core CT, 333mV, 2.2" x 2.8" | CTV02-KD0 |
| 400 | Split Core CT, 333mV, 1.25" x 1.25" | CTV04-KD1 |
| 800 | Split Core CT, 333mV, 6.0" x 5.2" | CTV08-KG1 |
| 5-4000A | Rogowski Coil CT 16", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR2 |
| 5-4000A | Rogowski Coil CT 24", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR4 |

*333mV CTs, sold separately

Series 7000
12-Circut Embedded
with Display

Series 7000
48 Circuit Embedded
with Display


Series 7100
48 Branch
Circuit Monitor


Series 7100
12 Branch
Circuit Monitor

# VerifEye Series 7000 and 7100 Advanced 3-Phase Meters

The VerifEye™ Series 7000 and 7100 Advanced 3-Phase meters are a versatile option for a broad range of commercial/industrial submetering applications. The meter's versatile power metering functionality continues the VerifEye mission of lowering the total cost of collecting data by reducing install complexity and increasing flexibility. The plug-and-play integration ensures the full complement of data points are immediately captured and made available for countless applications.

## Features and Benefits

- Monitors a single 3-phase circuit
- Configurations options for 1-pole or 2-pole loads
- Solid core CTs (100A & 200A)
- Split core CTs (50A to 800A)
- Rogowski coil CTs (5A to 4000A)
- Line powered from 90-600V, phase-to-phase
- ANSI & IEC metering system accuracy including branch CTs
- Meter board features:
  - Easy access terminals for CT wiring, removable connectors
  - Easily route cable and view LEDs from any angle
  - Reports volts, amps, power, demand, and energy for each circuit
- Provides multi-phase totals for loads with 1-, 2-, and 3-pole breaker positions
- User-configurable alarm thresholds register for improved load management
- Selectable phase orientation
- Limited 5-year warranty

## Series 7000 and 7100 Advanced 3-Phase Meters

| Voltage | Description | Cat. No. |
|---|---|---|
| 90-346 Volts AC Line-to-Neutral, 600V Line-to-Line, CAT III | Series 7000 Advanced 3-Phase Meter (DIN Rail Mount) | 70D03-000 |
| | Series 7100 Advanced 3-Phase Meter (NEMA 1 Wall Mount Enclosure) | 71D03-000 |

## Compatible CT Options*

| Amp | Description | Cat. No. |
|---|---|---|
| 100 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV01-K17 |
| 200 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV02-K17 |
| 50 | Split Core CT, 333mV, 0.4" | CTV5X-WA4 |
| 100 | Split Core CT, 333mV, 1.6" x 2.1" | CTV01-KD0 |
| 200 | Split Core CT, 333mV, 2.2" x 2.8" | CTV02-KD0 |
| 400 | Split Core CT, 333mV, 1.25" x 1.25" | CTV04-KD1 |
| 800 | Split Core CT, 333mV, 6.0" x 5.2" | CTV08-KG1 |
| 5-4000A | Rogowski Coil CT 16", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR2 |
| 5-4000A | Rogowski Coil CT 24", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR4 |

*333mV CTs, sold separately


70D03-000


71D03-000

# VerifEye Series 7200-7300 Branch Circuit Monitors 48 Circuit (24 Virtual Meters)

The VerifEye™ Series 7200 and 7300 Virtual Element Advanced Branch Circuit Monitors are a cost-effective solution for electrical load management. The Series 7200 and 7300 platform is ideal for high density, branch circuit monitoring applications in both new construction and retrofit applications. The Series 7200 and 7300 monitors up to 24 branch circuits with one single meter board.

## Features and Benefits

- 48 individual Current Transformer (CT) inputs
- Inputs configurable as follows:
  - 24 virtual meters in any combination of single-phase, two-phase, or three-phase limited to the total 48 CT inputs
  - Consult factory for any other configurations
- Line powered from 90-600V, phase-to-phase
- Bidirectional monitoring
- Meets ANSI & IEC metering system accuracy requirements including branch CTs
- Supports split core and Rogowski Coil CTs
- Meter board features:
  - Easy access terminals for CT wiring, removable connectors
  - Available with or without display embedded options
- Reports volts, amps, power, demand and energy for each circuit—each Series 7200 and 7300 covers a complete 42 breaker panelboard plus mains for a total of 48 circuits
- User-configurable alarm thresholds register for improved load management
- Selectable phase orientation and number of circuits
- Limited 5-year warranty

## Series 7200-7300 Branch Circuit Monitors

| Voltage | Description | Cat. No. |
|---|---|---|
| 90-346 Volts AC Line-to-Neutral, 600V Line-to-Line, CAT III | Series 7200 Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, LCD display | 72D48-000 |
| | Series 7200 Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, no display | 72N48-000 |
| | Series 7300 Branch Circuit Monitor, 48 inputs, LCD display, NEMA 1 enclosure | 73D48-000 |

## Compatible CT Options*

| Amp | Description | Cat. No. |
|---|---|---|
| 100 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV01-K17 |
| 200 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV02-K17 |
| 50 | Split Core CT, 333mV, 0.4" | CTV5X-WA4 |
| 100 | Split Core CT, 333mV, 1.6" x 2.1" | CTV01-KD0 |
| 200 | Split Core CT, 333mV, 2.2" x 2.8" | CTV02-KD0 |
| 400 | Split Core CT, 333mV, 1.25" x 1.25" | CTV04-KD1 |
| 800 | Split Core CT, 333mV, 6.0" x 5.2" | CTV08-KG1 |
| 5-4000A | Rogowski Coil CT 16", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR2 |
| 5-4000A | Rogowski Coil CT 24", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR4 |

*333mV CTs, sold separately

72D48-000

72N48-000

73D48-000

# VerifEye Series 1000 Single Phase Meter Kits

## Features and Benefits

- Kits include meter, specified enclosure and required current transformers
- kWh and Demand Meter-S2000 Indoor Split Core Kits only
- 100-800 Amps
- Isolated Pulse output (standard)
- Large LCD display
- ANSI 0.5% revenue grade accuracy class
- Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards
- Up to three sets of split core or solid core CTs per phase can be paralleled per meter
- UL listed

**Series 1000 Single Phase Meter Kits* — 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 |

Indoor Series 1000 Single Phase Meter

**Series 1000 Single Phase Meter Kits* — 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 |

Outdoor Series 1000 Single Phase Meter

*Kits include meter, specified enclosure and required current transformers

# VerifEye Series 2000 3-Phase Meter Kits

## Features and Benefits

- Kits include meter, specified enclosure and required current transformers
- kWh and Demand Meter-S2000 Indoor Split Core Kits only
- 120/208V or 277/480V 3PH 4W WYE only
- 100-1200A
- Isolated pulse output — standard
- Large LCD Display
- Revenue grade accuracy: 0.5%
- Utilizes split and solid core current transformers (CTs) that are certified to all revenue grade accuracy standards
- Up to three sets of solid or split core CTs per phase can be paralleled per meter
- UL listed

## Series 2000 3-Phase Meter Kits — Indoor Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 120/208V 3PH 4W WYE Demand Meter | 100 | 3 Split CTs | 2K208-01D |
| | 200 | | 2K208-02D |
| | 400 | | 2K208-04D |
| | 800 | | 2K208-08D |
| | 1200 | | 2K208-12D |
| 277/480V 3PH W4 WYE Demand Meter | 100 | | 2K480-01D |
| | 200 | | 2K480-02D |
| | 400 | 3 Split CTs | 2K480-04D |
| | 800 | | 2K480-08D |
| | 1200 | | 2K480-12D |

## Series 2000 3-Phase Meter Kits* — Outdoor Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 120/208V 3PH 4W WYE kWh Meter | 100 | 3 Split CTs | 2O208-01W |
| | 200 | | 2O208-02W |
| | 400 | | 2O208-04W |
| | 800 | | 2O208-08W |
| | 1200 | | 2O208-12W |
| 277/480V 3PH 4W WYE kWh Meter | 100 | | 2O480-01W |
| | 200 | | 2O480-02W |
| | 400 | 3 Split CTs | 2O480-04W |
| | 800 | | 2O480-08W |
| | 1200 | | 2O480-12W |

**Note**: Kits include meter, specified enclosure and required current transformers.
*Outdoor meters do not offer demand functionality

Indoor Series 2000 3-Phase Meter

Outdoor Series 2000 3-Phase Meter

# VerifEye Series 3500 Advanced Multi-Function Meter Kits

## Features and Benefits

- Kits include meter, specified enclosure and required current transformers
- Advanced communications protocols:
  - Enabled by Ethernet, uses ModBus TCP/IP and BACnet IP
  - Isolated pulse output
- Integrates easily with building management systems
- Revenue grade accuracy: 0.5% accuracy class
- Delivers universal voltage performance
- 208/480V 2PH 2W, 120/208V 2PH 3W, 240/480V 3PH 3W, 120/208V, 277/480V 3PH 4W, 240/480V 3PH 4W DELTA
- 100-5000A
- Outputs kWh, Demand - Instant & Peak, Per Phase & — Total kWh, kW, kVAR, VAR, AMPS Interval Data
- Meets all applicable standards of ANSI C12.20 & C12.10
- 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

## Series 3500 Meter Kits* — Indoor Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 208-480VAC 3P 3W/4W ModBus TCP/BACnet IP | 100 | 3 Split CTs | 3KUMT-01M |
| | 200 | | 3KUMT-02M |
| | 400 | | 3KUMT-04M |
| | 800 | | 3KUMT-08M |
| | 1600 | | 3KUMT-16M |
| | 3000 | | 3KUMT-30M |
| | 5000 | | 3KUMT-50M |
| | 100 | | 3KUMT-1SM |
| | 200 | | 3KUMT-2SM |
| | 400 | | 3KUMT-4SM |

*Kits include meter, specified enclosure and required current transformers


Indoor Series 3500 Advanced Multi-Function Meter

## Series 3500 Meter Kits* — Outdoor Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| 208-480VAC 3P 3W/4W ModBus TCP/BACnet IP | 100 | 3 Split CTs | 3OUMT-01M |
| | 200 | | 3OUMT-02M |
| | 400 | | 3OUMT-04M |
| | 800 | | 3OUMT-08M |
| | 1600 | | 3OUMT-16M |
| | 3000 | | 3OUMT-30M |
| | 5000 | | 3OUMT-50M |
| | 100 | | 3OUMT-1SM |
| | 200 | | 3OUMT-2SM |
| | 400 | | 3OUMT-4SM |

*Kits include meter, specified enclosure and required current transformers


Outdoor Series 3500 Advanced Multi-Function Meter

# VerifEye 4000 Industrial ModBus Meter Kits

Series 4000 Industrial Modbus Meter Kits are revenue-grade (ANSI C12.20 Class 0.2%) kWh electrical meters. The Series 4000 Kits include a DIN rail mount, 3-phase, advanced communication meter with split core or flexible rope-style Rogowski CTs for compact or irregular shaped conductors. Combinations of serial communication, pulse output and phase alarms are provided to suit a wide variety of applications.

## Features and Benefits

- Kits include meter, specified enclosure and Split Core or Rogowski Coil current transformers
- Industrial Temperature Range -22°F to 158°F (-30°C to 70°C)
- 50/60Hz
- 90-600V versatility including 347V (L-N) and 600V (L-L)
- ANSI C12.20 0.2% Accuracy, IEC 62053-22 Class 0.2S
- Amperages
  - Split Core: 100, 200,400, 800A
  - Rogowski Coil: 50-5000A
- User-enabled password protection to protect meter from tampering
- Bright, backlit LCD for installation in dark areas and viewing real time data
- DIN Rail-Mount
- NEMA 4X Enclosure
- AMR/BAS system integration via ModBus RTU, RS-485 2-wire with shield
- Tenant cost allocation
- Energy conservation and cost reduction
- Green building initiatives and government mandates
- Measurement and verification
- Load profiling and benchmarking

### Series 4000 Meter Kits — Din Rail-Mount

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W | 100 | 3 Split Core CTs | 4KUMR-01M |
| | 200 | 3 Split Core CTs | 4KUMR-02M |
| | 400 | 3 Split Core CTs | 4KUMR-04M |
| | 800 | 3 Split Core CTs | 4KUMR-08M |
| | 50-5000 | 3, 12” Rogowski Coil CTs | 4KU MR-R12 |
| | 50-5000 | 3, 18” Rogowski Coil CTs | 4KUMR-R18 |
| | 50-5000 | 3, 24” Rogowski Coil CTs | 4KUMR-R24 |

### Stand Alone Meters

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W | 100, 200, 400, 800 | Split Core CTs Only | 4KUMR-00M |
| | 50-5000 | Rogowski Coil CTs Only | 4KUMR-00R |

### Series 4000 Outdoor NEMA Enclosure

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W | 100 | 3 Split Core CTs | 4OUMR-01M |
| | 200 | 3 Split Core CTs | 4OUMR-02M |
| | 400 | 3 Split Core CTs | 4OUMR-04M |
| | 800 | 3 Split Core CTs | 4OUMR-08M |
| | 50-5000 | 3, 12” Rogowski Coil CTs | 4OUMR-R12 |
| | 50-5000 | 3, 18” Rogowski Coil CTs | 4OUMR-R18 |
| | 50-5000 | 3, 24” Rogowski Coil CTs | 4OUMR-R24 |

### Series 4000 Components

| Amps | Description | Cat. No. |
|---|---|---|
| 100 | Split Core CTs | CTV01-KD0 |
| 200 | Split Core CTs | CTV02-KD0 |
| 400 | Split Core CTs | CTV04-KD1 |
| 800 | Split Core CTs | CTV08-KG1 |
| — | Fuse Pack, 1/2A, 600VAC, slow blow | CTV00-FK3 |
| 50-5000 | 12” Rogowski Coil CTs | CRV50-K62 |
| 50-5000 | 18” Rogowski Coil CTs | CRV50-K93 |
| 50-5000 | 24” Rogowski Coil CTs | CRV50-KC2 |

Series 4000 DIN Rail


Rogowski Coil CT

Series 4000 Outdoor


CTV01-K21

# VerifEye 4000 Bi-directional ModBus RTU and BACnet MS/TP Meter Kits

The VerifEye Series 4100 Bi-directional ModBus RTU and BACnet MS/TP Meter Kits feature bidirectional monitoring specifically designed for renewable energy applications. The Series 4100 Meter Kits measure power imported from the utility grid and power exported from renewable energy sources like solar panels. The Series 4100 Meter Kits are available in a Standalone DIN Rail-Mount or NEMA 4X enclosures and come with either split core or flexible rope-style Rogowski Current Transformers (CTs).

## Features and Benefits

- Versatile input voltage: 90-600V including 347V (L-N) and 600VAC (L-L) with fewer models to stock
- Options for 100, 200, 400 and 800A Split Core CTs and Rogowski CTs (20-5000A)
- DIN Rail-Mount for easy installation
- One device serves multiple locations
- User-enabled password protection to protect meter from tampering
- Bright, backlit LCD for installation in dark areas and viewing real time data
- Energy monitoring for AMR/BAS/BMS/EMS systems
- Renewable energy applications such as solar panels and wind
- AMR/BAS system integration via ModBus RTU or BACnet MS/TP (over RS-485 serial)
- CSI approval for California Solar Initiative

### Series 4100 Indoor — DIN Rail-Mount ModBus Meter Kits

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W ModBus | 100 | Split Core CTs | 4DUMR-01M |
| | 200 | Split Core CTs | 4DUMR-02M |
| | 400 | Split Core CTs | 4DUMR-04M |
| | 800 | Split Core CTs | 4DUMR-08M |
| | 50-5000 | 12” Rogowski Coil CTs | 4DUMR-12R |
| | 50-5000 | 18” Rogowski Coil CTs | 4DUMR-18R |
| | 50-5000 | 24” Rogowski Coil CTs | 4DUMR-24R |

### Series 4100 Indoor — DIN Rail-Mount BACnet MS/TP Meter Kits

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W BACnet/MS/TP | 100 | Split Core CTs | 4DUBM-01B |
| | 200 | Split Core CTs | 4DUBM-02B |
| | 400 | Split Core CTs | 4DUBM-04B |
| | 800 | Split Core CTs | 4DUBM-08B |
| | 50-5000 | 12” Rogowski Coil CTs | 4DUBM-12R |
| | 50-5000 | 18” Rogowski Coil CTs | 4DUBM-18R |
| | 50-5000 | 24” Rogowski Coil CTs | 4DUBM-24R |

### Series 4100 Outdoor — NEMA Enclosure ModBus Meter Kits

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W ModBus | 100 | Split Core CTs | 41OUM-01M |
| | 200 | Split Core CTs | 41OUM-02M |
| | 400 | Split Core CTs | 41OUM-04M |
| | 800 | Split Core CTs | 41OUM-08M |
| | 50-5000 | 12” Rogowski Coil CTs | 41OUM-R12 |
| | 50-5000 | 18” Rogowski Coil CTs | 41OUM-R18 |
| | 50-5000 | 24” Rogowski Coil CTs | 41OUM-R24 |

### Series 4100 Outdoor — NEMA Enclosure BACnet MS/TP Meter Kits

| Voltage | Amps | CTs Included | Cat. No. |
|---|---|---|---|
| Universal 3PH 3W/4W BACnet/MS/TP | 100 | Split Core CTs | 41OUB-01B |
| | 200 | Split Core CTs | 41OUB-02B |
| | 400 | Split Core CTs | 41OUB-04B |
| | 800 | Split Core CTs | 41OUB-08B |
| | 50-5000 | 12” Rogowski Coil CTs | 41OUB-12R |
| | 50-5000 | 18” Rog owski Coil CTs | 41OUB-18R |
| | 50-5000 | 24” Rogowski Coil CTs | 41OUB-24R |

Series 4100 Indoor

Series 4100 Indoor with Enclosure

# VerifEye Series 6000 Industrial Panel Mount Meter

The VerifEye Series 6000 Panel Mount Meters are designed to monitor a comprehensive data set of electrical parameters for industrial applications. These meters fit in a standard 92mm x 92mm panel mount cutout and are offered with a range of Split Core and Rogowski smart current transformers to cover a broad range of applications. The integrated configuration wizard makes initial setup quick and easy, reducing commissioning time and providing reliable results.

## Features and Benefits

- Real-time measurement of electrical values with graphical display
- Power quality analysis of service and loads
- Industrial electrical load management
- OEM panel shop applications
- Measurement of active, reactive, and apparent energy
- Alarms features to notify when parameters are outside defined ranges
- Auto-ranging CTs simplify setup and eliminate mistakes
- CT options from 25A to 6000A
- 5-year warranty

## Series 6000 Industrial Panel Mount Meter

| Voltage | Description | Cat. No. |
|---|---|---|
| Universal 3PH 3W/4W | Modbus RTU (RS485) Interface | 60P00-000 |
| Universal 3PH 3W/4W | Modbus TCP (Ethernet) Interface | 61P00-000 |

## Current Transformers

| Voltage | Description | Cat. No. |
|---|---|---|
| 25A-63A, 10mm ID | Series 6000 Split Core CT | CTS1A-K10 |
| 40A-160A, 14mm ID | | CTS2B-G14 |
| 63A-250A, 21mm ID | | CTS3C-G21 |
| 160A-600A, 32mm ID | | CTS6D-G32 |
| 600-4000A - 200mm (7.875in) | Series 6000 Rogowski CT | CRS4K-WRL |
| 1600-6000A - 300mm (12in) | | CRS6K-WRM |
| 1600-6000A - 600mm (24in) | | CRS6K-WRN |

## CT CABLES

| Description | Cat. No. |
|---|---|
| Series 6000 Meter - CT Cable RJ12 - 1x5M | CCSRJ-105 |
| Series 6000 Meter - CT Cable RJ12 - 1x10M | CCSRJ-110 |
| Series 6000 Meter - CT Cable RJ12 - 3x1M | CCSRJ-301 |
| Series 6000 Meter - CT Cable RJ12 - 3x2M | CCSRJ-302 |
| Series 6000 Meter - CT Cable Adapter RJ12 Female to Female | CCSRJ-3FF |

Series 6000 Meter


Split Core CT


Rogowski Coil CT

# Submetering Current Transformers (CTs)

The better the equipment, the better the measurement. Leviton meters utilize highly accurate current transformers for revenue-grade performance certified to ANSI standards. Options include split and solid core models. For added safety, all Leviton current transformers come with built-in voltage suppression devices that prevent hazardous voltages from developing on CT secondaries should they become disconnected from a meter with load current present. Compact and cost-effective solid core CTs slip over power lines to measure the electrical current flowing through the line.

**Solid Core — For use with Series 1000, 2000, 3500 and 8000 Meters, Mini Meters and MMUs Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 100:0.1A | 2 Solid Core, 1 each, Black, Red | CDA01-212 |
| | 3 Solid Core, 1 each, Black, Red, Blue | CDA01-213 |
| 200:0.1A | 2 Solid Core, 1 each, Black, Red | CDA02-212 |
| | 3 Solid Core, 1 each, Black, Red, Blue | CDA02-213 |
| 100:0.1A | Solid Core, 0.72", Black | CDA01-K12 |
| | Solid Core, 0.72", Blue | CDA01-L12 |
| | Solid Core, 0.72", Red | CDA01-R12 |
| 200:0.1A | Solid Core, 0.72", Black | CDA02-K12 |
| | Solid Core, 0.72", Blue | CDA02-L12 |
| | Solid Core, 0.72", Red | CDA02-R12 |
| 400:0.1A | Solid Core, .098", Black | CDF04-K24 |

**Split Core — For use with Series 1000, 2000, 3500, 8000, Mini Meters and Multiple Meter Units (MMUs) Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 100:0.1A | Split Core, .75" x .75" | CTD01-K16 |
| 200:0.1A | Split Core, 1" x 1" | CTD02-K16 |
| 400:0.1A | Split Core, 1.5", x 1.5" | CTD04-K23 |
| 800:0.1A | Split Core, 3" x 3.5" | CTC08-K46 |
| 1200:0.1A | Split Core, 4" x 6" | CTC12-K46 |
| 1600:0.1A | Split Core, 4" x 6" | CTC16-K96 |
| 3000:0.1A | Split Core, 5" x 7" | CTC30-57B |
| 5000:0.1A | Split Core, 5" x 7" | CTC50-57B |

**Split Core — For use with Series 4000, 4100 Industrial ModBus Meter Kits and Series 7000 and 7100 Meters Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 50A:0.333V | Split Core, 0.4" | CTV5X-WA4 |
| 100A:0.333V | Split Core, 1.6" x 2.1" | CTV01-KD0 |
| 200A:0.333V | Split Core, 2.2" x 2.8" | CTV02-KD0 |
| 400A:0.333V | Split Core, 6" x 5.2" | CTV04-KD1 |
| 800A:0.333V | Split Core, 6" x 5.2" | CTV08-KG1 |

**Rogowski Coil — For use with Series 4000 and 4100 Industrial ModBus Meter Kits Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 50-5000A | Rogowski Coil, 12" | CRV50-K62 |
| | Rogowski Coil, 18" | CRV50-K93 |
| | Rogowski Coil, 24" | CRV50-KC2 |

**Rogowski Coil — For use with Series 7000 and 7100 Meters Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 5-4000A | Rogowski Coil, 16" | CRV50-LR2 |
| | Rogowski Coil, 24" | CRV50-LR4 |

**333mV Solid Core — For use with Series 7000 and 7100 Meters Only**

| Amp | Description | Cat. No. |
|---|---|---|
| 333mV:100A | Solid Core CT | CDV01-000-K17 |
| 333mV:200A | | CDV02-000-K17 |
| 100:0.333mV | Solid Core, 0.6", Black | CDV01-010-K17 |
| 200:0.333mV | Solid Core, 0.78", Black | CDV02-010-K17 |

Solid Core Current Transformers
100A, 200A, 400A,
100mA/333V available

Split Core
Current Transformers
100A-5000A, 100mA available

Split Core
Current Transformers
100A-5000A, .333V available

333mV Solid Core
Current Transformers
100A-200A available

Rogowski Coil
Current Transformer
50A-5000A, .333V available

# Water Meters

Address a wide range of water measurement applications with Leviton water meter solutions. Water meter options include polymer and bronze models. These meters offer a cost-effective, reliable solution for incorporating water tenant billing and other metering projects. They are compatible with automated reading hardware and wireless AMR transmitters, simplifying integration into other metering and building systems.

## Features and Benefits

- Meets all AWWA standards
- California CTEP and NTEP approved models available for hot and cold water, residential application
- High quality long-life parts
- Tamper detection
- NSF-61-G
- Pulse output
- Designed for residential and commercial tenant billing applications
- Compatible with wireless AMR solutions
- Register units — US gallons

## Commercial Water Meters

| Description | Cat. No. |
|---|---|
| 3/4" by 5/8" Bronze Water Meter with Couplings | WMC75-BU1 |
| 1" Bronze Cold Water Meter with Couplings | WMC10-BU1 |
| 1.5" Bronze Cold Water Meter with Couplings | WMC15-BU1 |
| 2" Bronze Cold Water Meter with Couplings | WMC20-BU1 |
| 3/4" Bronze Hot Water Meter with Couplings | WMH75-BU1 |
| 1" Bronze Hot Water Meter with Couplings | WMH10-BU1 |
| 1.5" Bronze Hot Water Meter with Couplings | WMH15-BU1 |
| 2" Bronze Hot Water Meter with Couplings | WMH20-BU1 |

## Residential Water Meters

| Description | Cat. No. |
|---|---|
| 3/4" Cold Water Meter — CA certified, couplings sold separately | WMC75-PC1 |
| 3/4" Hot Water Meter — CA certified, couplings sold separately | WMH75-PC1 |
| 3/4" Meter Couplings, Polymer Set (2) | WMX75-PZ1 |
| 3/4" Spacer Tube, Polymer | WMX75-PY1 |

Commercial Bronze Hot Water Meter

Commercial Bronze Multi-Jet Cold Water Meter

Residential Polymer Cold Water Meter

Residential Polymer Cold Water Meter

# Gas Meters

Gas Meter options offer a reliable and cost effective means to incorporate additional utilities into a tenant billing or energy management program. They are compatible with automated reading hardware and wireless AMR transmitters, simplifying integration into other metering and building systems.

## Features and Benefits

- AMR/AMI compatible
- Tamper-resistant
- Pulse output
- Compatibility with Wireless AMR
- 400 CH Meter's Easy Turn design allows for a drastically simplified installation

## Gas Meters

| Description | Cat. No. |
|---|---|
| Residential Gas Meter with pulse output, 0.75" NPT c onnectors included | GMP75-201 |
| 250 CFH Gas Meter with temp condensation and pulse output, 1" connector set included | GMP10-251 |
| 400 CFH Commercial Gas Meter with temp condensation and pulse output, includes 1" or 1.5" connector set | GMP15-401 |

Gas Meter

# VerifEye Communication Products


Energy Monitoring Hub (Dual Ethernet & Modbus)


Energy Monitoring Hub (EMH)


EMB Hub


EMB HubLite


High Density Pulse Module


Flex I/O Module

ModHopper

| Specifications | Data Acquisition Hubs (Modbus Master) | | | | Input/Output Module | | Wireless Modbus/Pulse Transceiver |
|---|---|---|---|---|---|---|---|
| | Energy Monitoring Hub, Dual Ethernet, Dual Modbus | Energy Monitoring Hub (EMH)* | EMB Hub* | EMB HubLite* | High Density Pulse Module | Flex I/O Module | ModHopper |
| | EMHXD | A8812 | A8810 | A7810 | A8911 | A8332 | R9120 |
| Communication Protocols | Modbus RTU<br>Modbus TCP<br>TCP/IP<br>PPP<br>HTTP/HTML<br>FTP<br>NTP<br>XML<br>SNMP-Trap | Modbus RTU<br>Modbus TCP<br>TCP/IP<br>PPP<br>HTTP/HTML<br>FTP<br>NTP<br>XML<br>SNMP-Trap<br>BACnet IP | | Modbus TCP<br>TCP/IP<br>PPP<br>HTTP/HTML<br>FTP<br>NTP<br>XML<br>SNMP-Trap<br>BACnet IP | Modbus RTU | | Modbus RTU |
| Applications | Use with an Ethernet (LAN) connection to push-or-pull data via HTTP, XML, and FTP<br><br>Connect to web-based (IP-based) software dashboards, energy information management systems and demand response systems | | | | Use with EMH to take advantage of plug-in communication<br><br>Use with ModHopper for wireless communication<br><br>Push-or-pull meter data to VerifEye kiosks and software applications | | Designed specifically for wireless submetering<br><br>Collect meter data from multiple buildings over long distances<br><br>Self-healing mesh network using frequency agile technology |

* Pulse, analog, status and resistive

## HOW TO SELECT THE APPROPRIATE DATA ACQUISITION HUB

| | Modbus TCP | Modbus RTU | Pulse Inputs Onboard | 8 Flex Inputs On Board** | BACnet |
|---|---|---|---|---|---|
| **EMHXD-220 EMH** | X | X | - | - | - |
| **A8812-000 EMH** | X | X | 8 | X | X |
| **A8810-000 EMB Hub** | X | X | - | - | X |
| **A7810-000 EMB HubLite** | X | - | 4 | - | X |

# VerifEye Communication Systems

To create a data network between Leviton VerifEye submeters and stakeholders (BAS, third party billing, Leviton Energy Manager software, etc.), Leviton offers VerifEye Metering Communications Systems. These solutions transmit data from meters to end systems, creating a seamless transition between data collection and data/delivery display. Leviton's 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.

## Data Acquisition Hubs

Data Acquisition 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.

### Features and Benefits

- 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.)

**Data Acquisition Hubs**

| Description | Cat. No. |
|---|---|
| Energy Monitoring Hub — Non-Configured | A8812-000 |
| Energy Monitoring Hub, Dual Ethernet, Dual Modbus | EMHXD-220 |
| EMB Hub | A8810-000 |
| EMB HubLite | A7810-000 |
| Power Supply for EMB Hub and EMB HubLite (order separately)* | YBM07-001 |

*Power supply is used for EMB Hub and HubLite

A8812 Energy Monitoring Hub


EMHXD


A8810 EMB Hub

# Input/Output Modules

## High Density Pulse Module

The High Density Pulse Module provides a convenient way to expand a Leviton VerifEye 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.

### Features and Benefits

- External communications handled via shielded twisted pair 18-22 gauge wire allow communication up to 4000 feet — and pulse input communication up to 200 feet (consult factory for longer runs) using 18-24 gauge control wire
- DIN or wall mounting make installation 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

## 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 Standalone 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).

### Features and Benefits

- 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

## 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 data from meter points in existing buildings with minimum downtime or disruption of day-to-day operations.

### Features and Benefits

- Designed specifically for wireless metering and Leviton VerifEye Metering Solutions for guaranteed compatibility
- No software or programming required — 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

| Input/Out Modules | |
|---|---|
| **Description** | **Cat. No.** |
| High Density Pulse Module | A8911-000 |
| Flex I/O Module, 8 User Selectable Inputs, 2 Relay Outputs | A8332-000 |
| DIN Rail Mount Power Supply, +24VDC | PST24-I10 |
| **Wireless Modbus Pulse Transceiver** | |
| **Description** | **Cat. No.** |
| ModHopper and Power Supply | R9120-500 |
| High Gain Antenna for ModHopper | R9120-ANT |
| **NEMA Communication Bundles** | |
| **Description** | |
| Energy Monitoring EMB Hub with line voltage power supply, NEMA 4X enclosure | A8810-PS1 |
| Energy Monitoring EMB HubLite with line voltage power supply, NEMA 4X enclosure | A7810-PS1 |
| HD Pulse Module with line voltage power supply, NEMA 4X enclosure | A8911-PS1 |
| Flex I/O Module with line voltage power supply, NEMA 4X enclosure | A8332-PS1 |


A8911
High Density Pulse Module


R9120
Modhopper

A8810-PS1
Energy Monitoring EMB Hub


A8332
Flex I/O Module

# Wireless AMR System for Submetering

The Leviton VerifEye Wireless Automated Meter Reading (AMR) System is specifically designed to support wireless data collection from energy and water submeters in residential multi-tenant and specific commercial building applications. This fixed-network system allows for ease of data acquisition and export to tenant billing software and management platforms.

## Wireless Metering Data Transceiver (MDT)

The MDT records usage data from a wide variety of energy and water meters and transmits that data via radio frequency to the Data Concentrating Access Point (DCAP) in hourly intervals.

### Features and Benefits

- Single Input Pulse
- Dual Input Pulse
- Encoder
- Interval data options are also available with Time of Use (TOU) models

## Wireless Metering Data Transceiver (MDT) with LCD

For use in properties where easy access to meter readings are required under the Americans with Disabilities Act. The LCD screen displays the consumption for 60 seconds when the button is pushed and displays the same consumption value as the meter. All programmed parameters transfer to the DCAP for seamless integration into the data provided by the CIT and daily reports.

### Features and Benefits

- Specialized enclosure with a standard sized wallplate back piece that mounts to a standard 1-gang electrical box for a professional looking installation
- Powered by two AA batteries for a five-year battery life under typical conditions
- NTEP certification #16-013 accepted by California Weights and Measures

## Data Concentrating Access Points (DCAPs)

The DCAP is the brains of the VerifEye wireless system incorporating a powerful embedded micro-computer and integrated radio transceiver. The DCAP communicates with each Repeater and MDT and stores meter reading history.

### Features and Benefits

- Local storage of up to one million data points
- Multiple levels of security for database access
- Integrated alarm monitoring and configurable e-mail alerts
- Accurate real-time clock
- USB port for initial device setup

## RF Network Diversity Repeater

Extends the range of two-way radio signals between MDTs and DCAPs

### Features and Benefits

- Provides improved ability to receive distant RF signals
- Diversity antennas for optimal system communications redundancy

Wireless MDT

MDT with LCD


DCAP


Repeater

## Wireless AMR System for Submetering

| Wireless Metering Data Transceiver (MDT) | |
|---|---|
| **Description** | **Cat. No.** |
| Wireless Metering Data Transceiver (Wireless DCAP required to complete system), single pulse counter, 15 min TOU battery powered | T70MB-ST0 |
| Wireless Metering Data Transceiver (Wireless DCAP required to complete system), single pulse counter, 1-hour interval, battery powered | T70MB-SP0 |
| Wireless Metering Data Transceiver (Wireless DCAP required to complete system), dual pulse counter, 1-hour interval, battery powered | T70MB-DP0 |

| Wireless Metering Data Transceiver (MDT) with LCD | |
|---|---|
| **Description** | **Cat. No.** |
| Wireless Metering Data Transceiver with Display (Wireless DCAP required to complete system), single pulse counter, 1-hour interval, battery powered | T75MB-SP0 |
| Wireless Metering Data Transceiver with LCD (Wireless DCAP required to complete system), dual pulse counter, 1-hour interval battery powered | T75MB-DP0 |

| Data Concentrating Access Points (DCAPs) | |
|---|---|
| **Description** | **Cat. No.** |
| DCAP, low capacity (150 meter points max), includes radio receiver | T25DX-151 |
| DCAP, standard capacity, (1000 meter points max), includes radio receiver | T25DX-102 |
| DCAP, high capacity, (2000 meter points max) includes radio receiver | T25DX-202 |

| Wireless Repeater | |
|---|---|
| **Description** | **Cat. No.** |
| Repeater, 5V, includes 5VDC 1A plug-in power supply and internal backup battery | T95RX-000 |
| DCAP, low capacity (150 meter points max), includes radio receiver | T25DX-151 |
| DCAP, standard capacity, (1000 meter points max), includes radio receiver | T25DX-102 |
| DCAP, high capacity, (2000 meter points max) includes radio receiver | T25DX-202 |

# Panel Solutions

Leviton offers a wide range of configured panel solutions for the communications, data acquisition, and submetering market. With in-house UL508A Panel Shop certification, Leviton can deliver significantly better value than third party panel shops.

## 70D48-N4X High Density Meter

**Features and Benefits**

- 48 circuit meter with dual reference voltage inputs
- Supports both Modbus and BACnet interface
- NEMA 4X Enclosure
- Fuse protection for two reference voltage circuits

## A8810-41M | A8810-41R Data Acquisition Solutions

**Features and Benefits**

- DAS for data logging and control
- 3-phase meter for bi-directional power monitoring
- 24V DC Power Supply included

## 81M00-0 Data Acquisition Solution

**Features and Benefits**

- DAS with Wireless ModHopper
- Base Station for 900 mHz wireless architecture
- 24V DC Power Supply included

**UL508 Panels**

| Description | Cat. No. | Integrated DAS | Integrated Meter | Integrated Communications |
|---|---|---|---|---|
| VerifEye ModHopper, Phantom Antenna, Power Supply | U0M00-E00 | - | - | R9120 ModHopper Wireless |
| VerifEye ModHopper, HD Pulse Module, Power Supply | UMH00-000 | - | - | A8911 HD Pulse Module, R9120 ModHopper Wireless |
| VerifEye A8810, Dual Protocol Modem | 810DU-0 | A8810 | - | 4G Dual Protocol Modem |
| VerifEye A8810, HD Pulse Module, Power Supply | 81H00-000 | A8810 | - | A8911 HD Pulse Module |
| VerifEye A8810, HDPM, Dual-Band Modem (CradlePoint) | 81HDU-0 | A8810 | - | A8911 HD Pulse Module, 4G Dual Procotol Modem |
| VerifEye A8810, ModHopper, Power Supply | 81M00-000 | A8810 | - | - |
| VerifEye A8810, 70D12, Power Supply | 81000-L12 | A8810 | 70D12 | - |
| VerifEye A8810, 70D48, Power Supply | 81000-L48 | A8810 | 70D48 | - |
| VerifEye A8810, 4DUMR-00M, DUAL-Band (CradlePoint), Switch | 81SDU-41M | A8810 | 4DUMR-00M (Split Core) | 4G Dual Procotol Modem, Ethernet Switch |
| VerifEye A8810, 4DUMR-00R, DUAL-Band (CradlePoint), Switch | 81SDU-41R | A8810 | 4DUMR-00R (Rogowski) | 4G Dual Procotol Modem, Ethernet Switch |
| VerifEye A8810, 4DUMR-00M, Power Supply | A8810-41M | A8810 | 4DUMR-00M (Split Core) | - |
| VerifEye A8810, 4DUMR-00R, Power Supply | A8810-41R | A8810 | 4DUMR-00R (Rogowski) | - |
| VerifEye 70D12, 3P Disconnect | 70D12-N4X | - | 70D12 | - |
| VerifEye 70D48, 2 x 3P Disconnects | 70D48-N4X | - | 70D48 | - |

70D48-N4X

A8810-41M | A8810-41R

81M00-0

# VerifEye Software Solutions

**Save Energy, Reduce Costs, Be Sustainable**

VerifEye software solutions provide simple, effective, turn-key solutions to monitor energy in real time. Designed to seamlessly integrate with VerifEye submetering hardware and communication systems, VerifEye software allows facilities to introduce smart energy management strategies, saving money and resources. Verification software includes Building Manager Online (BMO) - web-based interval data collections software platform. Visit **leviton.com/verifeye** for more information.

## Measurement & Verification (M&V) Software

**Measure. Monitor. Manage. Bill.**

Energy monitoring and reporting is the key to measuring and managing energy efficiency and cost. Decision makers everywhere are turning to VerifEye Measurement & Verification (M&V) Software solutions 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 Building Manager Online (BMO) delivers the most sophisticated tools to drive energy efficiencies, reduce operating costs and create more sustainable, environmentally sound facilities.

## How VerifEye Measurement & Verification (M&V) Software Works

**Simple, Effective, Turnkey Solution to Monitor Energy in Real Time**

- Meters record real-time consumption data
- Energy Monitoring Hub (EMH) receives meter data and pushes it to a data center and pushes it to the cloud
- VerifEye M&V software analyzes, formats and reports the data
- User logs into VerifEye M&V software website and accesses data and reports


Leviton Submeters | Energy Monitoring Hub (EMH) | Data Center | User Interface BMO

# Building Manager Online (BMO)

BMO web-based software offers users tools for automated energy information that can be summarized to identify consumption and demand patterns in defined time intervals. A wealth of information in multiple reports and additional graphical formats is available. The software also allows users to set email alerts for the most critical data. Select from three distinct modules including the Base, Advanced Reporting, and Tenant Billing Modules to achieve facility and code compliance needs.

## Features and Benefits

- Software platform tool with a capacity for managing an entire portfolio of buildings
- Configure dashboards to graphically display user defined energy information data
- View building information updated in 15-minute intervals—energy usage, measured parameters, cost metrics and more
- Set goals for energy usage at the building or portfolio level
- Receive alerts and alarms via email or SMS
- View and display current and future weather data based on desired geographical location
- Create virtual meters to report aggregated loads for lighting, HVAC, etc.

| | Base Module | Advanced Reporting | Tenant Billing |
|---|---|---|---|
| | Web-Based Software | | |
| Primary Functions | Provides a summary of energy profiles to help identify high and low consumption as well as energy usage patterns for user defined intervals. Populates reports based on user configured preferences. Assists end users in meeting the growing requirements of local and national energy codes such as Title 24, ASHRAE 90.1, Seattle Energy Code and New York Local Law 88. | Includes all the functionality of the Base Module with the addition of enhanced reporting and dashboarding features.<br>Adds support for Daily and Hourly Heat Maps, Drift Analysis reporting and Kiosk display.<br>Provides custom report design features. | Monitor individual units to create invoices and tenant billing reports.<br>Supports an online portal for tenants to log in and monitor their usage and billing information.<br>Includes all the features of both the Base and Advanced Reporting Modules. |

| Building Manager Online | |
|---|---|
| **Base Module Module** | |
| **Description** | **Cat. No.** |
| BMO Energy Management Software - Annual License (50 Data Points) | BMOBM-050 |
| BMO Energy Management Software - Monthly License (50 Data Points) | BMOBM-M50 |
| **Advanced Reporting Module** | |
| **Description** | **Cat. No.** |
| BMO Energy Management Software with Advanced Reporting - Annual License (50 Data Points) | BMOAR-050 |
| BMO Energy Management Software with Advanced Reporting - Monthly License (50 Data Points) | BMOAR-M50 |
| **Tenant Billing Module** | |
| **Description** | **Cat. No.** |
| BMO Tenant Billing Software - Annual License (50 Data Points) | BMOTB-050 |
| BMO Tenant Billing Software - Monthly License (50 Data Points) | BMOTB-M50 |
| **Support Services** | |
| **Description** | **Cat. No.** |
| BMO Short Term Support Plan (90 Days) | BMOSW-STP |
| BMO Long Term Support Plan (1 Year) | BMOSW-LTP |

## SERVICE AND SUPPORT DURING EVERY STEP OF THE PROCESS

Optimizing lighting energy efficiency requires more than just installing a device or two. Leviton service and support options bring together system design, product selection, installation, and service to provide seamless end-to-end solutions. 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

- ASHRAE 90.1 - Get ASHRAE 90.1 information at your finger tips with real-world applications and single source compliance strategies - go to https://ashrae.leviton.com
- IECC provides the minimum requirements for energy-efficient design of most buildings. Get IECC code compliant solutions, information and more - go to https://www.iecc.leviton.com
- 2022 Title 24, Part 6 - The basic goal of Title 24 energy standards is the reduction of energy use. Get Title 24 code compliant solutions, information and more - go to https://title24.leviton.com
- Energy code portal with line cards for individual state codes and rebates and incentives - go to http://www.leviton.com/energycodes
- ez-Learn – access education tools from the comfort of your home or office with this exclusive 24/7 online training – go to www.leviton.com/ezlearn
- IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 Apps - simplifies IECC, ASHRAE 90.1. and Title 24 lighting control requirements and provides examples for common applications
- Field service engineers for top-level support
- Dedicated submetering support and M&V regional sales specialists
- Dedicated technical support via phone at 800 959-6004

**Leviton Manufacturing Co., Inc. Global Headquarters**
201 North Service Road, Melville, NY 11747-3138 **tel** 800-323-8920 **tech line** (8:00AM-10:00PM ET Mon-Fri, 9:00AM-7:00PM ET Sat, 9:00AM-5:00PM ET Sun) 800-824-3005

**Leviton Manufacturing Co., Inc. Lighting & Controls**
10385 SW Avery Street, Tualatin, OR 97062 **tel** 800-736-6682 **tech line** (6:00AM-4:00PM PT Mon-Fri) 800-959-6004

**Visit our website at: www.leviton.com/lightingandcontrols**
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