PRODUCT CATALOG

OCCUPANCY SENSORS • DAYLIGHT CONTROLLERS

sensorswitch®

An AcuityBrands Company

AcuityBrands.
Controls

LIGHTING CONTROLS : EVOLVED

Acuity Brands Controls provides highly evolved lighting controls solutions by drawing from an extensive portfolio of respected product brands. This breadth allows us to tailor our solutions for use in any application, to achieve any performance requirement, and to meet any budget.

Sensor Switch
- Occupancy Sensors & Daylighting Controls
- Standalone Programmable Relay Panels
- Outdoor Photocontrols

Synergy
- Centralized Architectural Dimming Systems
- Native BACnet Control Systems
- Wall Dimmers & Scene Controls

Lighting Control & Design
- Scalable Centralized Relay Panel Systems
- Distributed & Fixture Level Relay Systems

R.O.A.M. [Remote Operation Asset Management]
- Wireless Relays & Photocontrols for Roadway, Off-Roadway, & Other Outdoor Lighting
- Remote Monitoring, Control, & Diagnostics through Hosted Web Portal

Simply5
- Addressable Fluorescent Dimming Ballasts
- Intelligent Room Level Control without Commissioning

nLight
- Networked Occupancy Sensors, Photocells, Dimming, Relays, & Manual Controls
- Distributed System with Web-Based Software for Intelligently Combining Occupancy-Based, Time-Based, Daylight-Based, & Manual Lighting Control

In addition to being a single source for a broad range of lighting control products, which simplifies the design and specification portion of a project, Acuity Brands Controls utilizes its vast experience and technical expertise to ensure 100% customer satisfaction. Additionally, contractors and end-users will find our system start-up and product support capabilities both extensive and convenient.

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sensorswitch®

Since our founding in 1987, Sensor Switch has been the industry leader in lighting control innovation, focusing on engineering products that cost-effectively deliver energy efficiency, as well as convenience. Our occupancy sensors and daylight controllers deliver better performance through usage of advanced detection technologies, while still being simple to install and easy to use.

BETTER PERFORMANCE THROUGH

PIR Superior Passive Infrared Detection

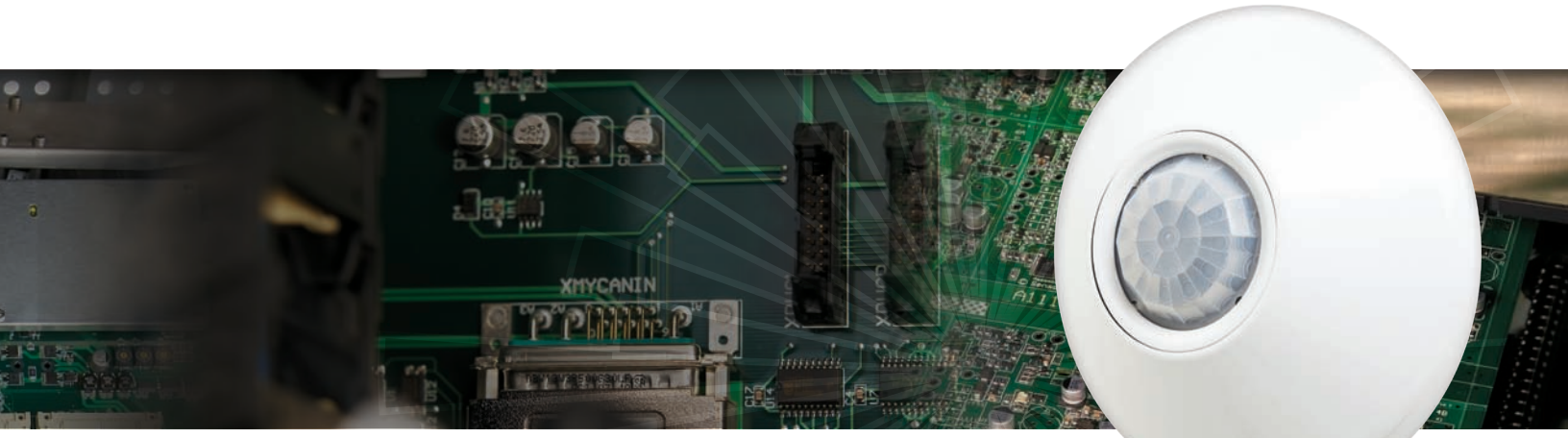
- Allows a more energy-saving time delay setting (e.g., 10 min vs. 15 min) to be utilized without fear of false offs. This further underscores our faith in our detection abilities
- No sensitivity adjustments required - install and forget
- Lower frequency response delivers excellent small motion detection at great distances
- Each sensor fine-tuned for optimum detection for its coverage pattern

PDT Passive Dual Technology (PIR/Microphonics™)

- Sensors both see an occupant's motion and hear the sounds they make; this results in better detection than sensors using two separate technologies that only detect motion (e.g., Ultrasonic/PIR Dual Tech)
- Immune from conditions that typically cause false ons (e.g., persons walking by a space or non-occupant movements within a space)
- 100% acoustically passive - no high frequency transmissions, no potential for interference, and none of the headaches common w/ other technologies
- Patented by Sensor Switch

MADE in AMERICA

All Sensor Switch occupancy sensors and indoor daylight controllers are manufactured in the USA in our own state-of-the-art facility. Besides ensuring product quality and reliability, in-house production allows for maximum responsiveness to our customers. Additionally, it provides us with manufacturing agility, which, coupled with our intense engineering drive, allows us to bring advanced products to market quickly and efficiently.



ADVANCED TECHNOLOGY

LampMaximizer® Technology (patent pending)

- Enables users to aggressively target energy savings while still protecting lamp life
- Minimum On timer (15 min default) - preserves lamp life by eliminating all lamp cycles shorter than lamp manufacturer recommendations
- Occupancy time delay (10 min default) - lower time delay increases energy savings
- Provides an optional LampMaximizer+ mode that enables automatic adjustment of occupancy time delays according to a sophisticated control algorithm that determines sensors' optimum switching behavior in order to maximize both lamp life and energy savings
- Maintains statistics on total lamp on time and number of cycles

Innovative Daylighting Controls

- Self-Calibrating - capable of finding optimum set-point for installed location
- Easy-to-apply - deploy standalone or combine with occupancy sensors
- On/Off, Stepped Dimming, and Full Range Dimming options

LEADERSHIP in INNOVATION

Sensor Switch is an engineering driven company with a commitment to innovation. This has led to our consistent introduction of new and advanced products and technologies to the industry, many of which are patented.

1995

MICROPHONICS™ PASSIVE DUAL TECHNOLOGY

Detecting occupants in rooms with obstructions that block a Passive Infrared (PIR) sensor's line of sight, such as bathroom stalls or office cubicle partitions, is a common sensor application requirement. For these applications, Sensor Switch developed Microphonics™ technology, which utilizes a microphone inside the sensor to hear sounds indicating occupancy. Microphonics™ is always paired with PIR technology, engaging after occupancy is initially detected via PIR.

Patented by Sensor Switch, sensors using both PIR and Microphonics™ detection are referred to as having Passive Dual Technology.

Microphonics™ is superior to alternatively used ultrasonic technology in that it provides better detection performance, requires less power, and does not transmit sound waves into the space, thus eliminating all potential for interference.

2007

nLIGHT®

nLIGHT CONTROL SYSTEM LIGHTING CONTROL : EVOLVED

nLight is the first lighting control system to cost-effectively integrate occupancy-based, daylight-based, time-based, and manual control methods. With nLight, facility managers install one comprehensive system without the limitations of centrally hardwired equipment. Compared to traditional control systems, nLight delivers increased energy savings and occupant convenience with lower equipment and installation costs, providing a quick return on investment.

For more information, refer to the nLight Design Guide and Catalog.

1987 Founding of Sensor Switch

Passive Infrared (PIR) Wall Switch Sensor

1989 PIR Ceiling Sensor

Wall-to-Wall PIR Wall Switch Sensor

HID Bi-Level Sensor

1991 Decorator Style Wall Switch Sensor

1993 Relay Contact Protection (Patented)

2-Pole Wall Switch Sensor

Self-Contained Line Voltage Sensors

Dual Technology Wall Switch Sensor

1995 Microphonics™ (Patented)

Dimming Control Photocell for 0-10 VDC Ballasts

1997 Interchangeable Sensor Wiring (Patented)

Long Range High Bay Sensor (Patented)

Universal Low Voltage Sensor Interface (Patented)

1999 Data Logger Monitoring System

Battery Powered PIR Sensor (Patented)

2001 Fixture Mounted Sensor Housing

Ballast Discriminator (Patented)

2003 Sensor Switch Training Facility Opens

208/480 VAC Switching Sensors

Microprocessors First Added to Sensors

2005 NightLite Sensor Wins LightFair Innovation Award

Self-Calibrating Photocell

2007 Sensor Switch Canada Opens

nLight Control System (Patent Pending)

2009 Sensor Switch joins the Acuity Brands Family of Companies

LampMaximizer® Sensor (Patent Pending)

WHAT'S NEW

Sensor Switch is constantly enhancing our existing products, as well as adding new solutions to our portfolio.

Wall Switch Decorator (WSD) Sensors

- New, more contractor-friendly mounting strap
- Convenient ground screw replaces the ground wire
- Additional down-looking lens segments enhance detection coverage (pg 22)

ROHS Compliance

- Sensor Switch's manufacturing facility uses 100% ROHS compliant processes. Our products are completely lead free and 99% are fully ROHS compliant.

FB3 Snap-in Fixture Bracket

- Allows for quick installation (pg 53)

LampMaximizer®

- Incorporation of LampMaximizer features into occupancy sensors (see side bar)

SwitchPod

- Low voltage switches and dimmers for use with standard sensors and power packs (pg 78)

Test Mode[1]

- Method that quickens sensor testing procedures by setting all occupancy time delays to 30 secs, all photocell transition delays to 2 secs, and greatly increasing all dimming rates. Sensor will revert to normal operation if left in test mode.

Refrigerator Aisle Sensor Kit (RA KIT)

- Customized sensor solution for controlling LED lighting in commercial refrigerator/freezer cases (pg 56)

100% Digital PIR Detection[1]

- Provides excellent immunity to RF noise

High / Low Occupancy Controlled Dimming

- Provides a second occupancy sensor time delay that enables 0-10 VDC ballasts to go to a dim setting before turning off

SFR 5

- This new high bay sensor discretely snaps into fixtures (pg 54)

Enhanced Microphonics Filtering

- Greater immunity to non-occupant noises

Outdoor Photocontrols

- New line of devices with several mounting styles (locking receptacle, threaded pipe with swivel, and button type)

[1] Feature in all CM(R), RM(R), CM(R)B and WV sensors

LAMPMAXIMIZER®
LAMPMAXIMIZER+

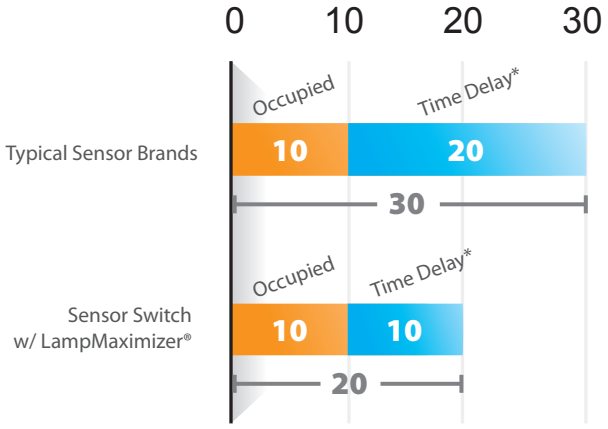
LAMPMAXIMIZER®

- Sensors with LampMaximizer® technology allow users to aggressively target energy savings while still protecting lamp life. A Minimum On timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than lamp warranties specify.
- A standard occupancy time delay is also present, which ensures lights turn off (assuming minimum on timer has elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, and is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the units push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+.

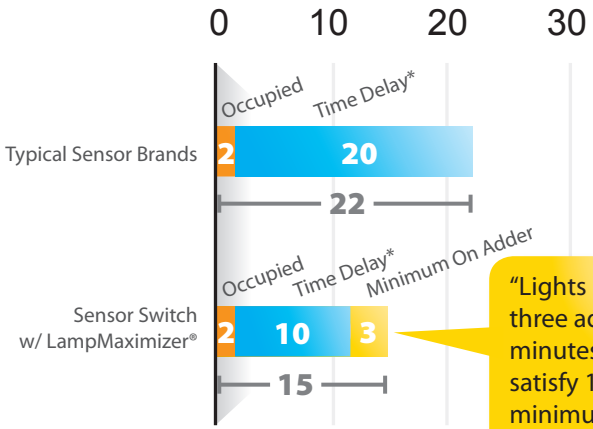
LAMPMAXIMIZER+

- LampMaximizer+ mode adjusts the occupancy time delay up or down relative to the observed usage of the space in which it is installed. The adjustments are based on an algorithm that optimizes both lamp life and energy savings. In practice this means a shorter more energy saving time delay will be utilized only if it won't adversely affect lamp life.
- This mode works equally well in high-activity areas as well as those of limited use. While the occupancy time delay is constantly being modified, the user can choose the initial, maximum, and minimum times for it via the push-button. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

Case 1



Case 2



"Lights held on for three additional minutes in order to satisfy 15 minute minimum on timer"

*Values reflect default settings

EXTRA 33% SAVINGS

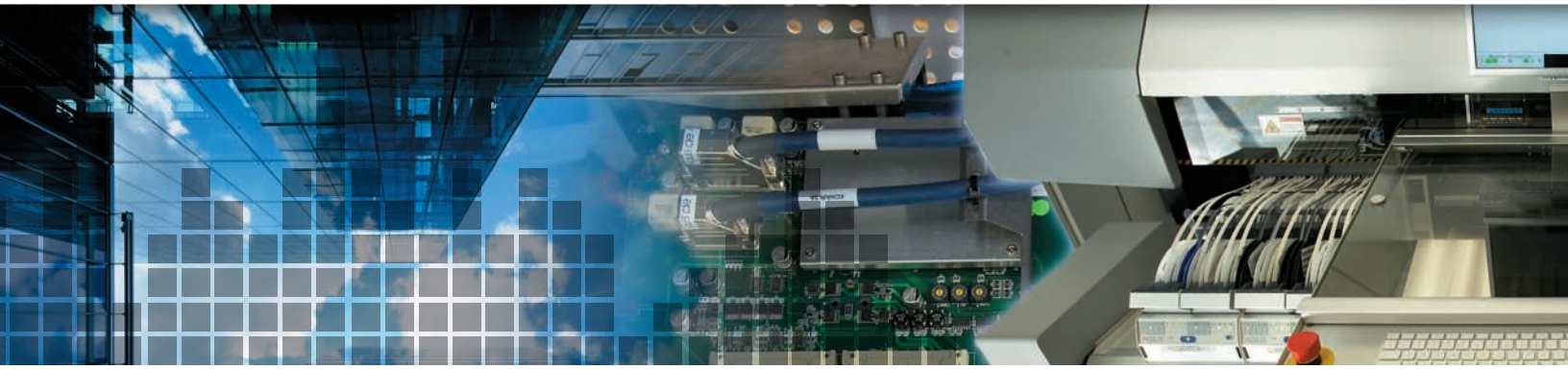
EXTRA 32% SAVINGS

Conclusions

- While all sensors meet lamp manufacturers recommended on times, only Sensor Switch units do so without wasting potential energy savings
- Only Sensor Switch detection technologies allow utilization of a 10 minute occupancy time delay without risk of increasing false offs
- LampMaximizer eliminates potential lamp short-cycling caused by confusing adaptive or walk-through modes, and false offs/ons

ROI by DESIGN

Since our founding, Sensor Switch has developed a reputation for delivering energy savings along with return on investment (ROI). This has made us a respected partner in the green building industry, engineering lighting control systems that maximize energy efficiency and user convenience, while also delivering maximum ROI.



HERE to HELP YOU

While Sensor Switch products are among the easiest to install and use in the industry, there are virtually limitless application options. To help navigate the possibilities, our technical services team provides advanced knowledge and responsive assistance, including:

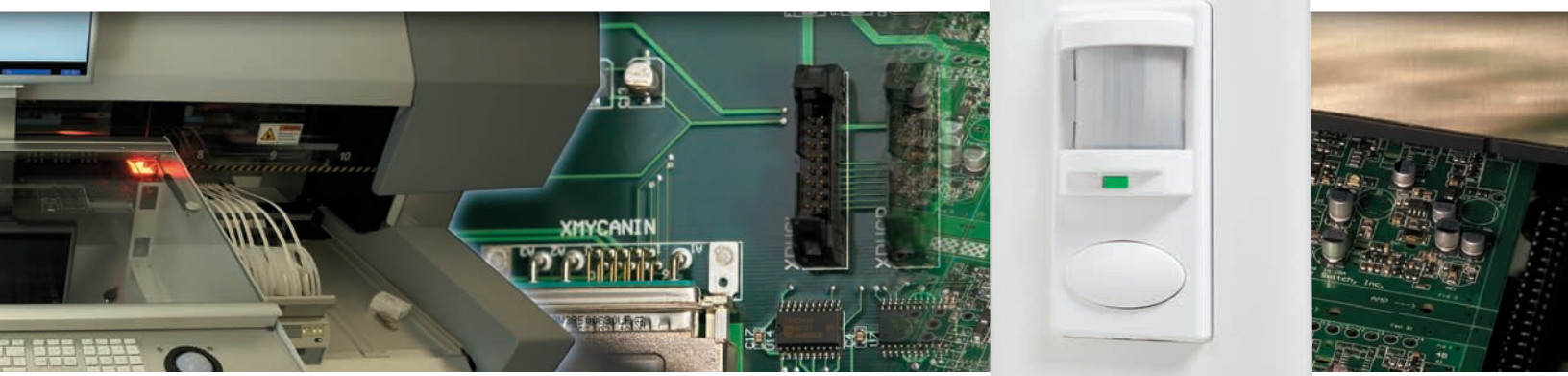
- Complimentary project layout services and custom design tools
- Hands-on training at our on-site technology center
- Modeling of facility lighting and occupancy patterns using our Data Logger Monitoring System. This system provides you with easy to read graphical reports of the "Lights On vs. Occupancy" activity per area; this makes it the ultimate tool for proving the savings of a retrofit project.

GOING BEYOND ENERGY SAVINGS

While Sensor Switch's products inherently deliver energy savings, we have taken the extra initiative to develop and use only environmentally friendly technology and sustainable manufacturing practices, including:

- Sensors that use acoustically passive technology, meaning they do not emit invasive Ultrasonic sound waves into the environment
- Development of LampMaximizer® technology that determines a sensor's switching behavior in order to optimize both lamp life and energy savings, thus minimizing landfill requirements for spent lamps.
- Voluntary compliance with RoHS standards

UNMATCHED EASE of INSTALLATION & USE



Wiring Made Simple

- Wall Switch sensors require no neutral wire or minimum load - even dual technology and two-pole units
- Line voltage sensors are impossible to wire backwards - two identical black wires are used for connection to line and load
- Patented feature prevents reverse wiring - a condition which causes damage to other brands' sensors

Program Without Tools

- All device settings are digitally programmed via a series of simple push-button sequences
- No analog dials/pots, dip switches, or removing wall plates required to change settings
- Photocells have an automatic set-point calibration mode that can be run at any time of the day and in any daylight conditions; this mode saves time and eliminates callbacks

Convenient To Apply

- Our sensors are compatible with other brands' power packs, allowing for seamless transitions when converting from other brands
- Low voltage sensors (both PIR and Dual Technology) draw very low current, enabling 14+ to be connected to one power pack (compared to <5 of other brands)
- Patented relay contact protection provides ultra long relay life (tested to over 400,000 cycles)

This guide is intended to assist with choosing the appropriate Sensor Switch occupancy sensor for your space and application. Each character or group of characters in a Sensor Switch model number indicates a specific feature or option for that particular sensor. The sections of this guide describe the choices available for each of the feature categories. The example below explains the categories that make up the model number **CMR PDT 10 P.**

By dividing up any Sensor Switch occupancy sensor model number into the parts described in this guide, the sensor's full functionality can be determined. This guide will also better enable you to build your own model numbers by choosing from each category the features and options your project requires.

ANATOMY OF A MODEL NUMBER

CM	R	PDT	10	P
Ceiling Mount	Line Voltage	PIR & Microphonics™	Extended Range	Photocell
Enclosures	Power	Detection	Lens	Options

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ENCLOSURES

Sensor Switch occupancy sensors come in a variety of different enclosure styles that are both functional and attractive while still being easy to mount. The enclosure style for most sensors is indicated by the first few letters in their model number.

Wall Switch Decorator
WSD

Physical Specs:

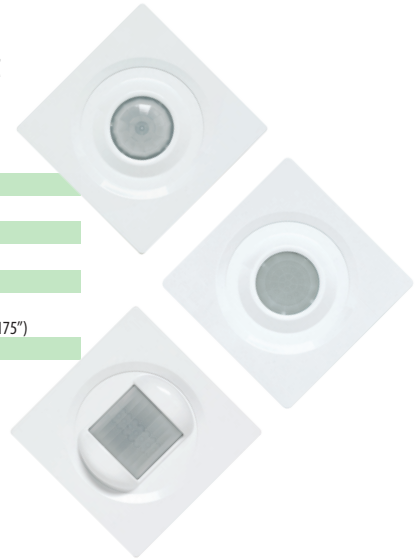
Size (not including mounting strap):	
H:	2.74″ (6.96 cm)
W:	1.68″ (4.27 cm)
D:	1.63″ (4.14 cm)
Weight:	
	5 oz
Mounting:	
	Single Gang Switch Box
Color:	
	White Gray Black
	Ivory Light Almond

Ceiling Mount
CM

Physical Specs:

Size:	
Diameter:	4.55″ (11.56 cm)
Depth:	1.55″ (3.94 cm)
Weight:	
	6 oz
Mounting:	
	Ceiling Tile Surface (Low Voltage)
	3.5" Octagon Box
	Single Gang Handy Box
Color:	
	White

Recessed Mount
RM



Physical Specs:

Size:	
Width (square):	4.40″ (11.18 cm)
Weight:	
	6 oz
Mounting:	
	4″ Square Junction Box
	(minimum box depth 2.175″)
Color:	
	White

Fixture Mount Box

CMB
CMRB[1]

Physical Specs:	
Size:	
H:	3.63″ (9.22 cm)
W:	3.63″ (9.22 cm)
D:	1.50″ (3.81 cm)
Weight:	
	6 oz
Mounting:	
	1/2″ Knockout in Fixture or Junction Box
Color:	
	White

HMB
HMRB[2]

Physical Specs:	
Size:	
H:	3.63″ (9.22 cm)
W:	3.63″ (9.22 cm)
D:	1.50″ (3.81 cm)
Weight:	
	6 oz
Mounting:	
	1/2″ Knockout in Fixture or Junction Box
Color:	
	White

Surface Mount

HM LWS WVR[4]
HMR[3] LWSH HWR[5]

Physical Specs:	
Size:	
H:	4.96″ (12.60 cm)
W:	3.10″ (7.87 cm)
D:	1.70″ (4.32 cm)
Weight:	
	7 oz
Mounting:	
	Single Gang Handy Box
Color:	
	White
	Ivory

Wall/Corner Mount

WV, HW

Physical Specs:	
Size:	
H:	3.00″ (7.62 cm)
W:	3.60″ (9.14 cm)
D:	1.75″ (4.45 cm)
Weight:	
	4 oz
Mounting:	
	Directly to Corner or to Ceiling using WV BR Bracket
Color:	
	White

Embedded Small Box

SB

Physical Specs:	
Size:	
H:	3.40″ (8.64 cm)
W:	3.40″ (8.64 cm)
D:	1.40″ (3.56 cm)
Weight:	
	6 oz
Mounting:	
	2.65″ Square Opening in Fixture (minimum depth 1.50″)
Color:	
	White

Embedded Snap-Fit

SF

Physical Specs:	
Size:	
H:	2.25″ (5.72 cm)
W:	1.38″ (3.51 cm)
D:	0.82″ (2.08 cm)
Weight:	
	4 oz
Mounting:	
	Snaps into 2 3/16″H x 1 5/16″W x 1″D Cavity in Fixture
Color:	
	White

[1] CMRB is the Line Voltage Enclosure of the CMB
[2] HMRB is the Line Voltage Enclosure of the HMB
[3] HMR is the Line Voltage Enclosure of the HM
[4] WVR is the Line Voltage Enclosure of the WV
[5] HWR is the Line Voltage Enclosure of the HW

POWER TYPE

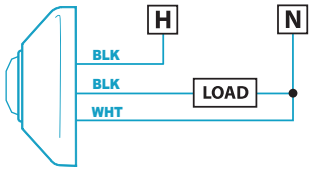
This category specifies how a sensor is powered, as well as its switching capabilities. By default, sensors are powered by low voltage and require a power pack to switch a circuit; therefore, no special characters need to be added to the model number.

In contrast, line voltage sensors are powered by and can switch line voltage without a power pack. Line voltage model numbers have the letter "**R**" inserted with the enclosure designation (e.g., **CMR**[1]).

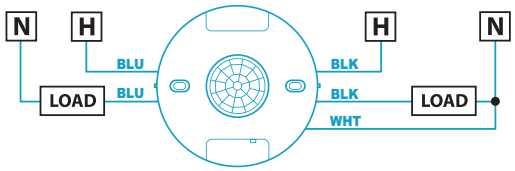
Line Voltage

- Sensors contain line voltage switching relays
- Ideal for retrofit applications with concrete or inaccessible ceilings
- Interchangeable line & load wires (Sensor Switch patented)
- Impossible to wire backwards
- Sensors capable of switching two poles independently are indicated by adding **2P** to the model number (e.g., **CMR 6 2P**)
- Sensors capable of simultaneously switching two phases (e.g., 208, 240, or 480 VAC) are indicated by adding 208 or 480 to the model number (e.g., **CMR 6 480**)

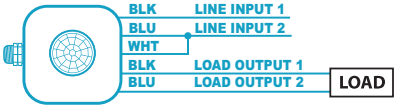
1-POLE



2-POLE



208/480 VAC



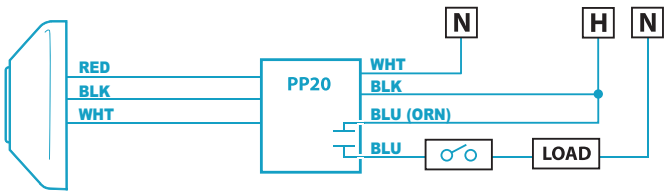
SPECIFICATIONS

Line Voltage Sensors

- No minimum load requirements
- Max Load Rating/Pole (1 Phase Only)[2]:
  - 800 W @ 120 VAC
  - 1200 W @ 277 VAC
  - 1500 W @ 347 VAC
  - 5 Amps @ 208/240, 480 VAC
- 1/4 HP Motor Load
- Frequency: 50/60 Hz

Low Voltage

- Powered via power pack or other low voltage source
- Used with a power pack to enable complete 20 Amp circuits to be switched
- Enables multiple sensors to be used together to cover space
- Allows sensor mounting without a junction box and utilizes convenient low voltage wiring



SPECIFICATIONS

Low Voltage Sensors

- Operating Voltage: 12-24 VAC/VDC
- Output: Drives up to 200 mA of connected load
- Current Draw:
  - Standard Sensor 4 mA
  - w/ R option 16 mA
- Wire lead connections are Class II, 20 AWG

Power Packs

- Operating Voltage: 120 / 277 VAC (PP20) or 347 VAC (PP20 3)
- Load Rating (Max): 20 Amps
- Motor Load (Max): 1 HP
- Wiring:
  - Low Voltage, Class II 20 AWG
  - Line Voltage, 16 & 18 AWG
- Plenum Rated
- Powers up to 14 sensors
- Patented Relay Circuit Protection up to 400K Cycles (PP20 & SP20 versions only)

[1] For Fixture Mount Box (**CMB**) sensors, the "**R**" is placed before the "**B**" to indicate line voltage (e.g., **CMRB**)
[2] Load ratings not applicable for **LWS** and **WVR** series sensors

DETECTION TECHNOLOGY

PIR & PDT

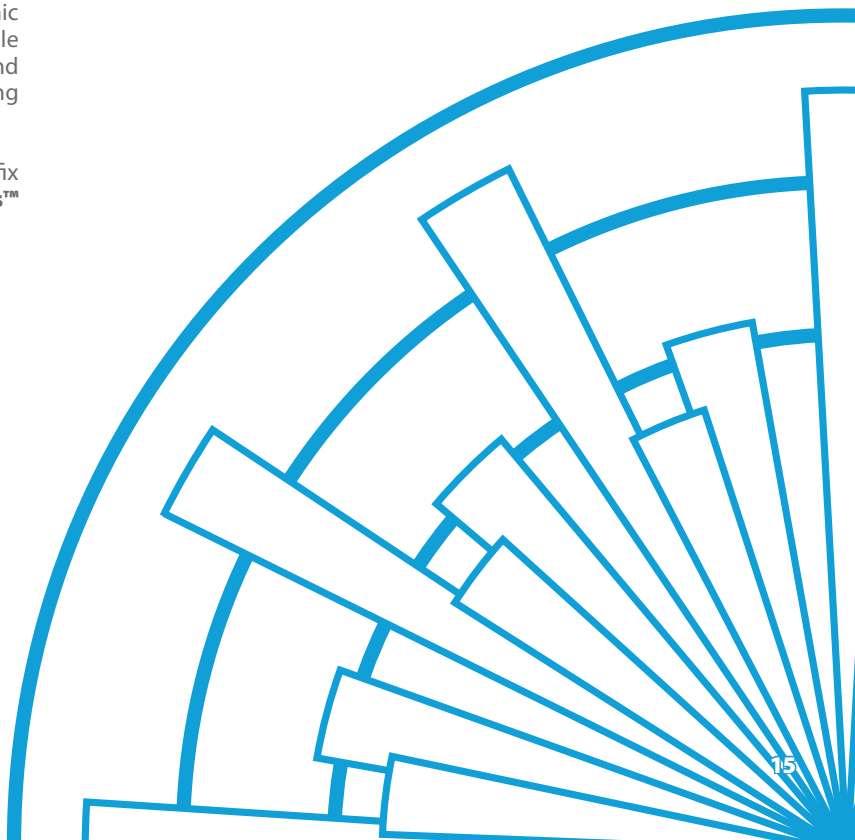
All of our sensors utilize **Passive Infrared (PIR)** technology to detect changes in the infrared energy given off by occupants as they move within the field-of-view. As heat given off by the human body moves in and out of the beams, the detector sees this and triggers the occupancy mode. Our lens designs create a continuous array of beams that provide an even coverage. Additionally, we fine-tune our sensors to detect small motions even at great distances, while still preventing false trips.

Microphonics™ technology uses a microphone inside the sensor in order to hear sounds indicating occupancy in rooms with obstructions, such as bathrooms with stalls or open office cubicle areas. By using **Automatic Gain Control** (AGC), the sensor can dynamically self-adapt to its environment by filtering out constant background noise and detecting only leading edge noises typical of human activity. Additionally, sensors with Microphonics use advanced digital acoustic filtering, so that the prolonged presence of persistent noises without any PIR events do not keep the lights on, nor do sounds with periodicity (such as from a time clock).

PIR + MICROPHONICS™ = PDT

Passive Dual Technology (PDT) combines both of these detection technologies. It requires sensors to first see motion using **Passive Infrared**, and then engages the **Microphonics™** to hear sounds that indicate continued occupancy. Patented by **Sensor Switch**, Passive Dual Technology using **PIR** and Microphonics is superior to alternatively used ultrasonic technology in that it provides better and more reliable occupancy detection performance, requires less power, and does not transmit sound waves into the space, thus eliminating all potential for interference.

All sensors utilize **PIR** technology by default. Including the suffix **PDT** after the enclosure model number adds **Microphonics™** detection to the sensor.

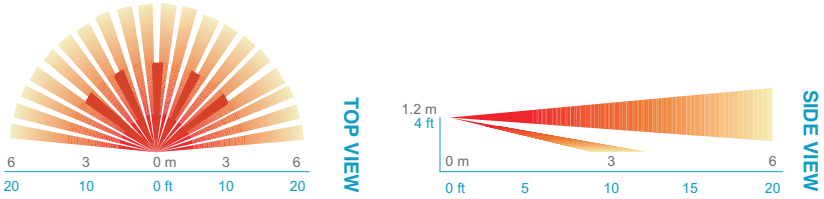


LENS TYPE Passive Infrared

It is important to select a lens type with a PIR coverage pattern that not only accommodates the space's area requirements, but also its application. The following pages diagram the PIR coverage pattern of each lens style and describe the applications for which they are best suited.

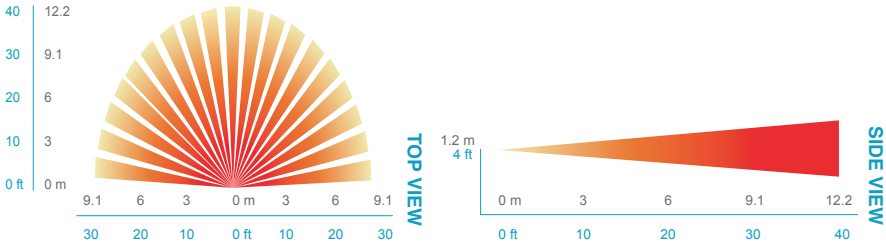
WSD Wall Switch Decorator Lens

- Small motion **(e.g., hand movements)** detection up to 20 ft (6.10 m)
- Large motion **(e.g., walking)** detection up to 50 ft (15.24 m)
- Wall-to-Wall coverage
- Vandal resistant option (V) decreases range by 50%



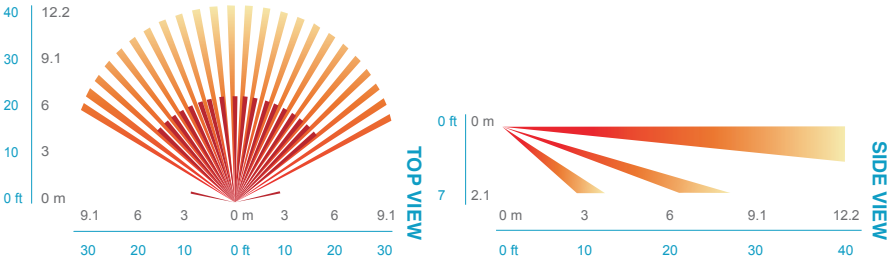
LWS Large Area Wall Switch

- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Wall-to-Wall coverage
- 30 to 48 in (76.20 to 121.92 cm) high mounting



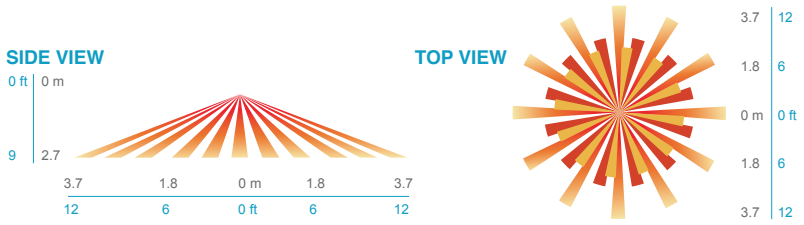
LWSH Large Area Wall Switch

- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Wall-to-Wall coverage
- 48 to 84 in (121.92 to 213.36 cm) high mounting



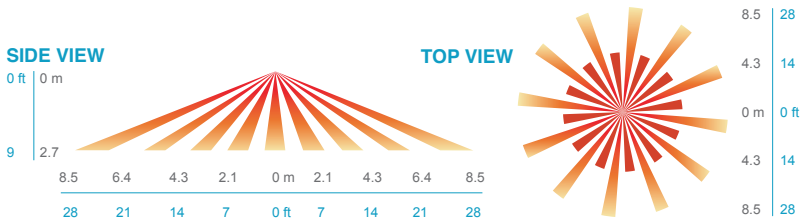
9 Standard Range 360° Lens

- Best choice for small motion **(e.g., hand movements)** detection
- Viewing angle of 56° in a 360° conical shaped pattern
- Provides 12 ft (3.66 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage



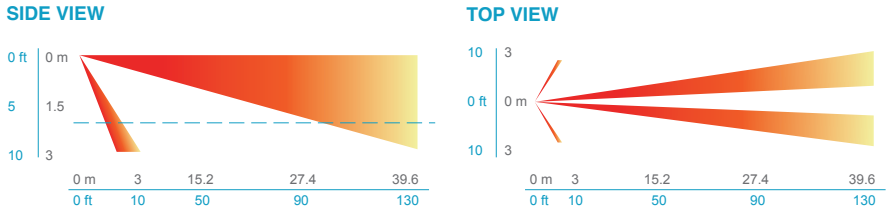
10 Extended Range 360° Lens

- Best choice for large motion **(e.g., walking)** detection
- Viewing angle of 67° in a 360° conical shaped pattern
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage



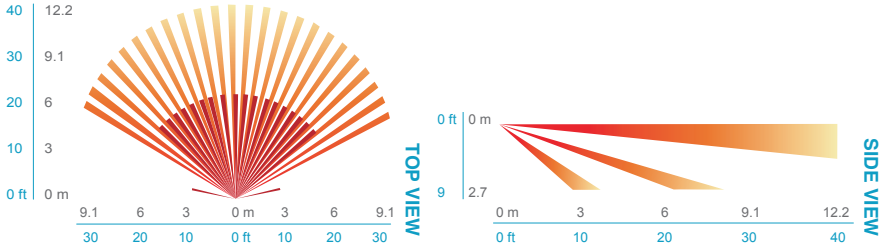
13 Hallway View Lens

- Large motion **(e.g., walking)** detection up to 130 ft (39.62 m)
- Designed for 7 ft (2.13 m) high mounting at end of hall
- Should always be applied in pairs facing each other



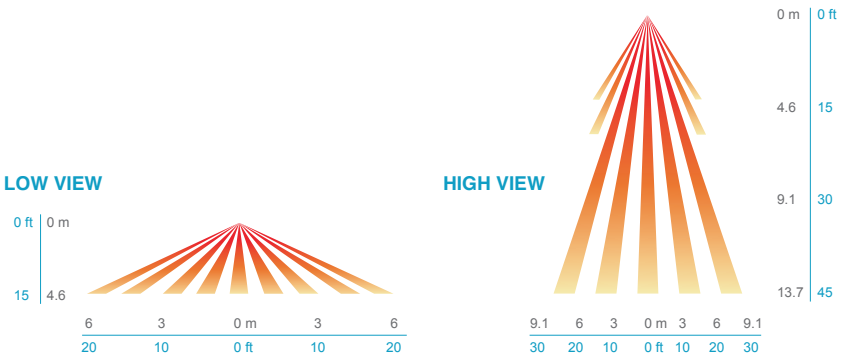
16 Wide View Lens

- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Large motion **(e.g., walking)** detection up to 70 ft (21.34 m)
- Designed for 8 to 10 ft (2.44 to 3.05 m) high mounting in room corner



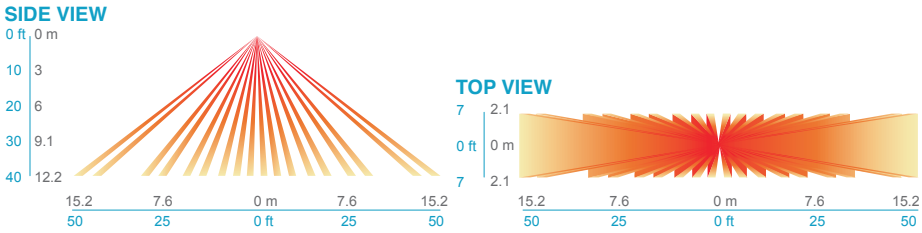
6 High Bay 360° Lens

- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion **(e.g., walking)** up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion **(e.g., forklifts)** up to a 45 ft (13.72 m) mounting height



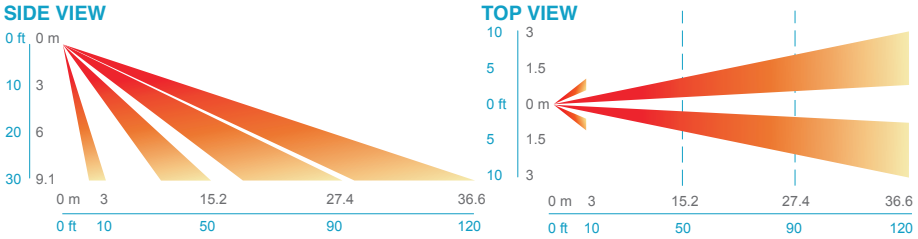
50 High Bay Bi-Directional Aisleway Lens

- Provides 50° bi-directional and 10° wide coverage pattern
- 1.2x mounting height equals approximate detection range in either direction
- Typical 40 ft (12.19 m) mounting detects 50 ft (15.24 m) in either direction



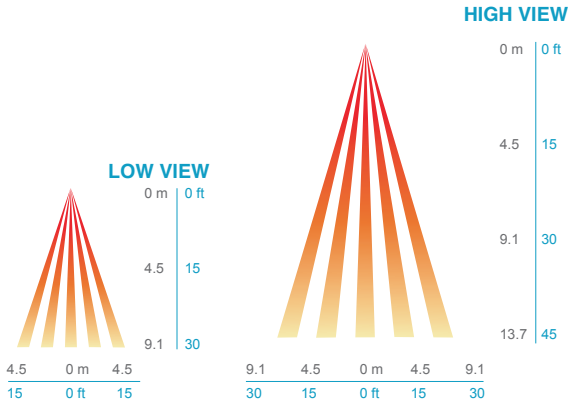
HM 10 High Bay End-of-Aisle Lens

- Detects motion from the end of aisles up to 110 ft (33.53 m) long
- Designed to mount 30 ft (9.14 m) high and 10 ft (3.05 m) back from end-of-aisle
- Should always be applied in pairs facing each other



5 Mini-High Bay 360° Lens

- Recommended for fixtures that have a 1.0 spacing to mounting height ratio or less (e.g., fixtures 30' on center or less @ a 30' mounting height).
- Recommended for mounting heights between 30 to 45 ft (9.14 to 13.72 m)
- 15 to 20 ft (4.57 to 7.62 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion **(e.g., walking)** up to a 35 ft (10.67 m) mounting height
- Excellent detection of extra large motion **(e.g., forklifts)** up to a 45 ft (13.72 m) mounting height



OPTIONS

The previous sections of this guide define the portion of the model number referred to as a sensor's series number. Following this series number, there may be additional characters in the model number that define the optional features included on the sensor. This section describes each option and its model number character suffix. The datasheet for each sensor series lists its available options.

R Isolated Low Voltage Relay

- Enables low voltage sensors to interface with a building management system
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- The relay is energized when ALL connected sensors register unoccupied
- When using multiple sensors, only one sensor per zone needs to have a relay

Note: *Sensor must have power at all times for the relay to function.*

D Occupancy Controlled Dimming

- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- When using multiple low voltage sensors, only one sensor per zone needs to have dimming output

P Photocell

- Features auto set-point calibration
- Fully digital, all settings in foot-candles

On/Off mode

- Photocell has full control during periods of occupancy
- Recommended for public areas, such as vestibules, corridors, or restrooms

Inhibit mode

- Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off
- Recommended for areas where people do work (private and open offices)

ADC Photocell w/ Auto Dimming

- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

DZ Dual Zone Photocell

- Provides more advanced daylighting control for 2-Pole line voltage occupancy sensors
- Single shared set-point is used for both poles

Stepped Dimming (DUO) Mode

- Ideal for A/B (also called inboard/outboard) switching applications
- Determines the necessary on/off combination of the two poles in order to maintain adequate lighting

Percentage Offset (Dual Zone) Mode

- Ideal for classrooms with individually controlled parallel rows of lights
- Uses a relative set-point for the second pole, which is a percentage of the first pole's set-point

347 347 VAC

- Allows sensor to be powered by and switch 347 VAC
- Used primarily in Canada

SH Start-to-High

- Designed for use with HID bi-level fixtures
- Provides 20 minute warm-up timer, during which sensor stays in the on state

LT Low Temperature / High Humidity

- During manufacturing, the circuit board goes through a conformal coating process, making it corrosion resistant from moisture
- Enables operating temperatures down to -40º F (-40º C) for PIR sensors and -4º F (-20º C) for PDT sensors
- Ideal for cold storage applications or bath/shower rooms with condensing steam

OCCUPANCY SENSORS

DECORATOR WALL SWITCH SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES

Small Motion Detection up to 20 ft (6.10 m)
Multiple Operating Modes: Auto On / Manual On
Self-Contained Relay(s), No Power Pack Required
Green LED Indicator
User Adjustable Time Delay

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (disabled by default)
- Occ. Time Delay (10 min default)

CONTRACTOR FRIENDLY INSTALLATION
- No Neutral Wire Required
- No Minimum Load Required
- Intrinsically Grounded via Mounting Strap
- Interchangeable Line & Load Wires - Impossible to Wire Backwards
- Push-Button Programmable w/o Removing Cover Plate

PHYSICAL SPECS

DECORATOR ENCLOSURE

SIZE* H 2.74" (6.96 cm)
W 1.68" (4.17 cm)
D 1.63" (4.14 cm)
*Not Including Mounting Strap

WEIGHT 5 oz
MOUNTING Single Gang Switch Box
MOUNTING HEIGHT 30-48" (.76-1.21 m)
COLOR White, Ivory, Gray, Lt. Almond, Black

ELECTRICAL SPECS

MAX LOAD / POLE (1 Phase Only)
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
FREQUENCY 50/60 Hz
MOTOR LOAD 1/4 HP each pole
WIRING DIAGRAM Page 84 A-B

ENVIRONMENTAL SPECS

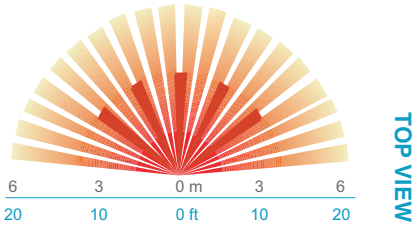
OPERATING TEMP
14º to 85º F (-10º to 29º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT
(non-photocell versions)

OVERVIEW

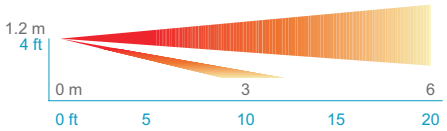
Wall Switch Decorator sensors are the most convenient method of adding occupancy detection to a room. A Wall Switch Decorator replaces an existing toggle switch and is perfect for private offices, copy rooms, closets, or any small enclosed space. For rooms that need independent control of two circuits, 2-Pole units are available. These sensors are perfect for bi-level applications such as inboard/outboard switching, or controlling a light and fan with different time delays.

Wall Switch Decorator sensors are available with either Passive Infrared (PIR) detection or Dual Technology (PIR/Microphonics™) detection for rooms with obstructions. These stylish sensors are offered in five colors and have multiple On Modes and Switch Modes that can be selected via the front push-button. Optional features include a vandal resistant lens (**V**), a photocell (**P**), and low temperature/high humidity (**LT**) resistance.

COVERAGE PATTERN



TOP VIEW



SIDE VIEW

WALL SWITCH DECORATOR LENS

- Small motion **(e.g., hand movements)** detection up to 20 ft (6.10 m)
- Large motion **(e.g., walking)** detection up to 50 ft (15.24 m)
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on
- Wall-to-Wall coverage
- Vandal resistant option (**V**) decreases PIR range by 50%

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5 YEAR WARRANTY

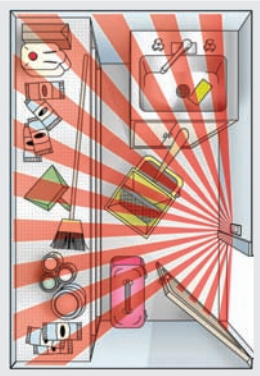
KEY SPECS

SERIES #	DEFAULT ON MODE	DETECTION	# OF RELAYS
WSD	Auto On	PASSIVE INFRARED	1
WSD PDT	Auto On	DUAL TECHNOLOGY	1
WSD SA	Manual On [Semi-Auto]	PASSIVE INFRARED	1
WSD PDT SA	Manual On [Semi-Auto]	DUAL TECHNOLOGY	1
WSD 2P	Auto On (P1)/Manual On (P2)	PASSIVE INFRARED	2
WSD PDT 2P	Auto On (P1)/Manual On (P2)	DUAL TECHNOLOGY	2

APPLICATIONS

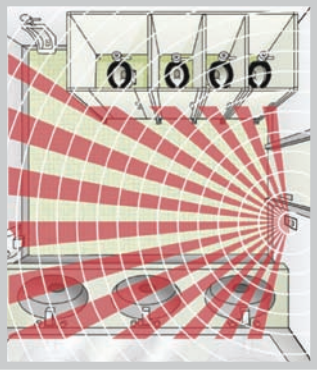
PIR PASSIVE INFRARED TECHNOLOGY

WSD
PRIVATE OFFICE



WSD V
STORAGE CLOSET

PDT PASSIVE DUAL TECHNOLOGY (PIR/MICROPHONICS™)

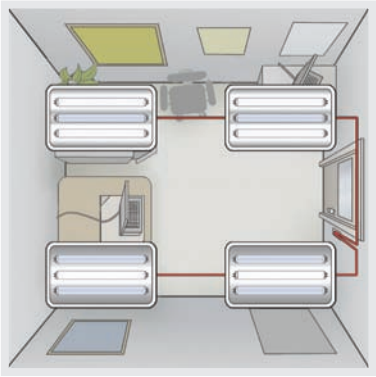


WSD PDT
RESTROOM WITH PARTITIONS

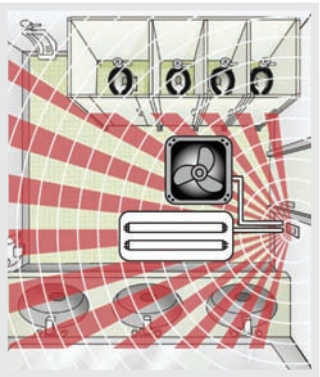
WSD PDT
PRIVATE OFFICE WITH OCCUPANT'S BACK TO SENSOR

2P 2-POLE SENSORS

The 2-Pole design of the **WSD (PDT) 2P** allows bi-level lighting control, making it perfect for private offices wired for A-B switching. Utilizing two push-buttons and two isolated power relays, the **WSD (PDT) 2P** is programmed by default to turn Pole 1's lights on automatically, while requiring the occupant to manually turn Pole 2's lights on using the switch. This complies with bi-level lighting code requirements. Additionally, the **WSD (PDT) 2P** handles applications with multiple loads and voltages, such as a restroom with 277 VAC lighting and a 120 VAC exhaust fan. Finally, time delays and photocell control can be set at different levels per pole, as well.



WSD 2P
PRIVATE OFFICE WITH BI-LEVEL SWITCHING

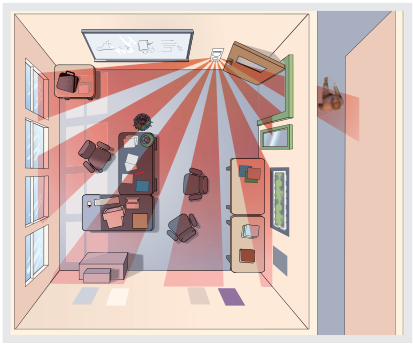


WSD PDT 2P
RESTROOM WITH LIGHT & FAN

DECORATOR WALL SWITCH SENSORS
LINE VOLTAGE [CONT]

OPERATIONAL MODES
AUTOMATIC ON VS. MANUAL ON (SEMI-AUTOMATIC) SENSORS

WSD (PDT) sensors automatically turn on the lights when occupancy is detected. However, there are situations where requiring the occupant to manually turn on the lights is desired. For example, if the sensor is installed in a location that can view outside the room, passersby will trigger the sensor. For these applications, the **WSD (PDT) SA** Series sensors should be used. Referred to as Semi-Automatic sensors, these sensors require the user to switch on the lights by pressing the push-button.



NOTE: Semi-Automatic sensors can be reprogrammed via the push-button to be Automatic On.

REDUCED TURN-ON
The sensor is initially set to only detect large motions, effectively ignoring any reflected PIR signals, while still sensing occupants when they enter the room. Once on, the sensor returns to maximum sensitivity.

SWITCH MODES

PREDICTIVE OFF
This mode allows occupants to turn lights off via the switch without losing the convenience of having the lights automatically turn on when they re-enter the room. Pressing the switch turns the lights off and temporarily disables the occupancy detection in the sensor. After a short exit time delay, the occupancy detection reactivates and monitors for an additional grace period. If no occupancy is detected, the zone will remain in Automatic On operation. If occupancy is detected, the zone will go to Permanent Off mode, requiring the switch to be pressed again in order to turn the lights on and restore the sensor to Automatic On operation.

PERMANENT OFF
Pressing the switch turns the lights off. Lights will not come on until the switch is pressed again.

SWITCH DISABLE
Prevents user from manually turning off the lights via the push-button. Button can still be utilized for programming.

OPTIONS

V VANDAL RESISTANT LENS
- Designed for use in high abuse or public areas
- Decreases detection ranges by 50%

P INHIBIT PHOTOCELL
- Auto set-point calibration
- Inhibit Operation: Prevents lights from turning on if adequate daylight is available, but does not turn the lights off
- 2-Pole units enable separate set-points per pole

347 347 VOLTAGE
- Allows sensor to be powered by and switch 347 VAC
- Cover plate for 347 VAC sensors included

COLOR MUST BE SPECIFIED
- **WH** White
- **IV** Ivory
- **GY** Gray
- **AL** Light Almond
- **BK** Black

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20º C for PDT)

ORDERING BLOCK

SERIES #	LENS TYPE	PHOTOCELL	VOLTAGE	COLOR	TEMP/HUMIDITY
WSD	**Blank** : Standard	**Blank** : None	**Blank** : 120/277 VAC	**WH** : White	**Blank** : Standard
WSD PDT	**V** : Vandal Resistant	**P** : Inhibit Photocell	**347** : 347 VAC	**IV** : Ivory	**LT** : Low Temp
WSD SA				**GY**: Gray	
WSD PDT SA				**AL** : Light Almond	
WSD 2P				**BK** : Black	
WSD PDT 2P					

[SERIES] [LENS TYPE] [PHOTOCELL] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : WSD V P WH LT

NIGHTLITE SENSOR
LINE VOLTAGE

SPECIFICATIONS

FEATURES

White LED Night Light doubles as Push-Button Switch
Designed for High Humidity
Vandal Resistant Lens
Self-Contained Relay - No Power Packs Required
Green LED Indicator
User Adjustable Time Delay

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (disabled by default)
- Occ. Time Delay (10 min default)

CONTRACTOR FRIENDLY INSTALLATION
- No Minimum Load Required
- Intrinsically Grounded via Mounting Strap
- Interchangeable Line & Load Wires - Impossible to Wire Backwards
- Push-Button Programmable w/o Removing Cover Plate

PHYSICAL SPECS

DECORATOR ENCLOSURE

SIZE* H 2.74" (6.96 cm)
W 1.68" (4.17 cm)
D 1.63" (4.14 cm)
*Not Including Mounting Strap

WEIGHT 5 oz
MOUNTING Single Gang Switch Box
MOUNTING HEIGHT 30-48" (.76-1.21 m)
COLOR White, Ivory, Gray, Lt. Almond, Black

ELECTRICAL SPECS

MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
NEUTRAL WIRE REQUIRED
FREQUENCY 50/60 Hz
MOTOR LOAD 1/4 HP
LED WATTAGE 0.1 Watt
WIRING DIAGRAM Page 84 C

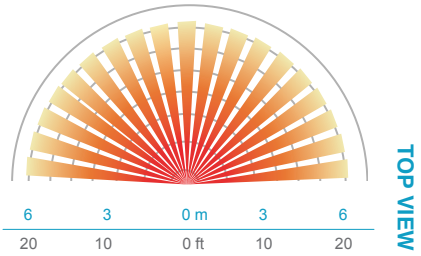
ENVIRONMENTAL SPECS

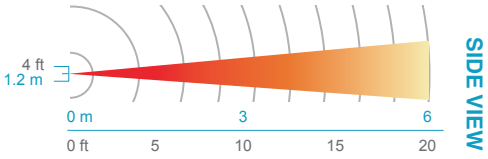
OPERATING TEMP
WSD NL
-40° to 85° F (-40° to 29° C)
WSD PDT NL
-4° to 85° F (-20° to 29° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

As the name implies, the NightLite Sensor is a combination 24/7 night light and occupancy sensor capable of turning the lights off when the room is vacant. The NightLite Sensor is the perfect solution for hotel and hospital bathrooms, where guests tend to leave the light on all night. A user-programmable time delay ensures that once the room is vacated the sensor will time out and turn off the lights. Available with either Passive Infrared (PIR) detection or Dual Technology (PIR/Microphonics™) detection for rooms with obstructions, the NightLite Sensor comes factory set in Manual On (Semi-Automatic) mode, meaning the button needs to be pressed in order to turn on the lights. Besides Manual On operation, several other On Modes and Switch Modes can be programmed into the sensor using the front push-button. The NightLite sensor comes with a vandal resistant lens and low temperature / high humidity resistance as standard features.

COVERAGE PATTERN





WALL SWITCH DECORATOR LENS

- Small motion **(e.g., hand movements)** detection up to 10 ft (3.05 m)
- Large motion **(e.g., walking)** detection up to 20 ft (6.10 m)
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises fromkeeping the lights on
- Wall-to-Wall coverage

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TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	VOLTAGE	COLOR
WSD NL	**Blank** : 120 VAC	**WH** : White
WSD PDT NL	**277** : 277 VAC	**IV** : Ivory
		GY: Gray
		AL : Light Almond
		BK : Black

[SERIES] [VOLTAGE] [COLOR]

EXAMPLE : WSD NL 277 WH

DECORATOR WALL SWITCH SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES
Small Motion Detection up to 20 ft (6.10 m)
Multiple Operating Modes -
Auto On/Manual On
User Adjustable Time Delay
Push-Button Programmable w/o
Removing Cover Plate
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (disabled by default)
- Occ. Time Delay (10 min default)

PHYSICAL SPECS
DECORATOR ENCLOSURE
SIZE* H 2.74" (6.96 cm)
W 1.68" (4.17 cm)
D 1.63" (4.14 cm)
*Not Including Mounting Strap
WEIGHT 5 oz
MOUNTING Single Gang Switch Box
MOUNTING HEIGHT 30-48" (.76-1.21 m)
COLOR White, Ivory, Gray, Lt. Almond, Black

ELECTRICAL SPECS
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER SUPPLY
PP20 (Page 60)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
WIRING DIAGRAM Page 85 F

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 85º F (-10º to 29º C)
RECOMMENDED POWER PACK
PP20 (Page 60)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

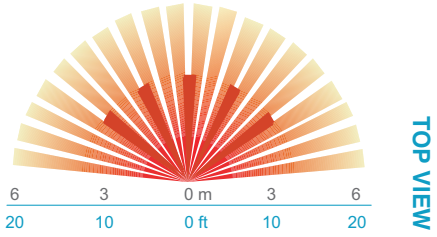
For rooms that require low voltage switches only, the low voltage version of the Wall Switch Decorator sensor is the perfect fit. Available with either Passive Infrared (PIR) detection or Passive Dual Technology (PIR/Microphonics™) detection for rooms with obstructions, these sensors have the same coverage pattern and all the same operational modes as the line voltage Wall Switch Decorator sensors. Optional features include a vandal resistant lens **(V)**, an isolated relay **(R)**, and low temperature/high humidity **(LT)** resistance.

SENSOR MODES

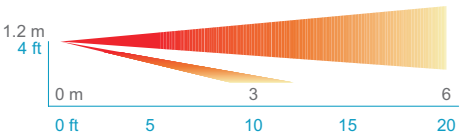
ON MODES
- Automatic On
- Manual On
- Reduced Turn-On

SWITCH MODES
- Normal
- Switch Disable
- Predictive

COVERAGE PATTERN



TOP VIEW



SIDE VIEW

WALL SWITCH DECORATOR LENS
- Small motion **(e.g., hand movements)** detection up to 20 ft (6.10 m)
- Large motion **(e.g., walking)** detection up to 50 ft (15.24 m)
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on
- Wall-to-Wall coverage

OPTIONS

V VANDAL RESISTANT LENS
- Designed for use in high abuse or public areas
- Decreases detection ranges by 50%

R ISOLATED RELAY
- Enables low voltage sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay

COLOR MUST BE SPECIFIED
- **WH** White
- **IV** Ivory
- **GY** Gray
- **AL** Light Almond
- **BK** Black

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F / 20º C for PDT)

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MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	LENS TYPE	LOW VOLTAGE RELAY	COLOR	TEMP/HUMIDITY
WSD LV	**Blank** : Standard	**Blank** : None	**WH** : White	**Blank** : Standard
WSD PDT LV	**V** : Vandal Resistant	**R** : w/ Relay	**IV** : Ivory	**LT** : Low Temp
			GY: Gray	
			AL : Light Almond	
			BK : Black	

[SERIES] [LENS TYPE] [LOW VOLTAGE RELAY] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : WSD LV V R WH

DECORATOR WALL SWITCH SENSORS
INTERNALLY POWERED

SPECIFICATIONS

FEATURES
Small Motion Detection up to 20 ft (6.10 m)
2-Wire: No Ground Needed
No Minimum Load
Dry Contacts: AC or DC
2, 10, or 20 min Time Delay
Green LED Indicator

PHYSICAL SPECS
DECORATOR ENCLOSURE
SIZE* H 4.20" (10.67 cm)
W 1.80" (4.57 cm)
D 1.50" (3.81 cm)
WEIGHT 5 oz
MOUNTING Single Gang Switch Box
MOUNTING HEIGHT 30-48" (.76-1.21 m)
COLOR White, Ivory, Gray, Lt. Almond

ELECTRICAL SPECS
MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
10 Amps @ 30 VDC
FREQUENCY 50/60 Hz
MOTOR LOAD 1/4 HP
BATTERY TYPE
Lithium Thionyl Chloride
WIRING DIAGRAMS Page 85 E

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 85º F (-10º to 29º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT
(non-photocell versions)

OVERVIEW

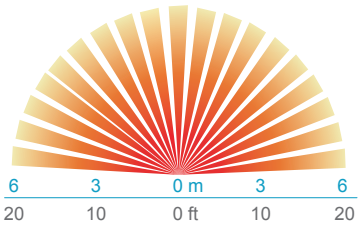
The IPD Series sensor is an internally powered Decorator Wall Switch sensor that is essential in applications where no ground connection is present. This unique sensor is capable of switching all voltages up to 347 VAC, while not requiring a minimum load. A patented ultra low current design enables an internal long-life battery to provide power to the sensor for years.

Optional features include a vandal resistant lens **(VS/VN)**, no switch, an inhibit photocell **(P)**, and low temperature/ high humidity **(LT)** resistance.

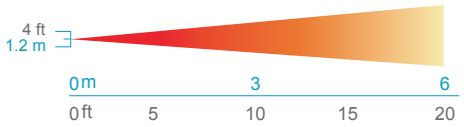
COVERAGE PATTERN

WALL SWITCH DECORATOR LENS

- Small motion **(e.g., hand movements)** detection up to 20 ft (6.10 m)
- Large motion **(e.g., walking)** detection up to 50 ft (15.24 m)
- Wall-to-Wall coverage
- Vandal resistant option **(VS/VN)** decreases range by 50%



TOP VIEW



SIDE VIEW

OPTIONS

VS VANDAL RESISTANT LENS
- Designed for use in high abuse or public areas, where occupants simply come and go
- Decreases detection ranges by 50%

SN / VN NO SWITCH OPTION
- Front slide switch is not present

P INHIBIT PHOTOCELL
- Inhibit Operation: Prevents lights from turning on if adequate daylight available, but does not turn the lights off

347 347 VOLTAGE
- Allows sensor to be powered by and switch 347 VAC
- Cover plate for 347 VAC sensors included

COLOR MUST BE SPECIFIED
- **WH** White
- **IV** Ivory
- **GY** Gray
- **AL** Light Almond

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	LENS/SWITCH	PHOTOCELL	VOLTAGE	COLOR	TEMP/HUMIDITY
IPD	**Blank** : Standard Lens w/ Switch **SN** : Standard Lens w/o Switch **VS** : Vandal Lens w/ Switch **VN** : Vandal Lens w/o Switch	**Blank** : None **P** : Inhibit Photocell	**Blank** : 120/277 VAC **347** : 347 VAC	**WH** : White **IV** : Ivory **GY** : Gray **AL** : Light Almond	**Blank** : Standard **LT** : Low Temp

[SERIES] [LENS/SWITCH] [PHOTOCELL] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : IPD VN P 347 GY

LARGE AREA WALL SWITCH SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES
Small Motion detection up to 40 ft (12.19 m)
Self-Contained Relay(s), No Power Pack(s) Required
Interchangeable Line & Load Wires
Impossible to Wire Backwards
3-Way & 4-Way Switching Compatible
No Minimum Load
Adjustable Time Delay
Green LED Indicator

PHYSICAL SPECS
SURFACE MOUNT ENCLOSURE
SIZE H 4.96" (12.60 cm)
W 3.10" (7.87 cm)
D 1.70" (4.32 cm)
WEIGHT 7 oz
MOUNTING Single Gang Switch Box
MOUNTING HEIGHT
LWS: 30-48" (76.2-121.92 cm)
LWSH: 48-84" (121.92-213.36 cm)
COLOR White, Ivory

ELECTRICAL SPECS
MAX LOAD / POLE (1 Phase Only)
13 Amps @ 120-347 VAC
FREQUENCY 50/60 Hz
Timers are 1.2 x for 50 Hz
MOTOR LOAD 1/4 HP each pole
WIRING DIAGRAM Page 84 A-B

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 85° F (-10° to 29° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT
(non-photocell versions)

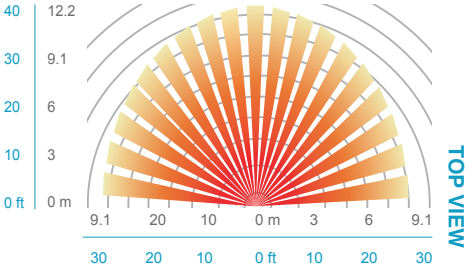
OPERATIONAL MODES

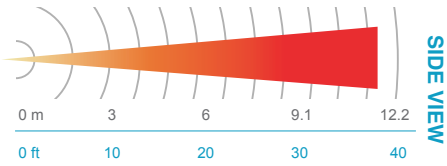
Large Area Wall Switch sensors are ideal products to use when retrofitting classrooms, large storage centers or open spaces where a coverage pattern larger than a decorator sensor's is needed, and where installing a low voltage systems is cost prohibitive. The **LWS** Series sensors surface mount at standard switch height, while the **LWSH** Series sensors surface mount from 4 to 7 ft (1.22 to 2.13 m). All styles are available with either Passive Infrared (PIR) detection or Dual Technology (PIR/Microphonics) detection for rooms with obstructions. The **LWS** and **LWSH** Series are line powered and available with one or two poles. All sensors can also be ordered with optional photocell or low temperature/high humidity resistance features.

COVERAGE PATTERN

LWS LARGE AREA WALL SWITCH LENS

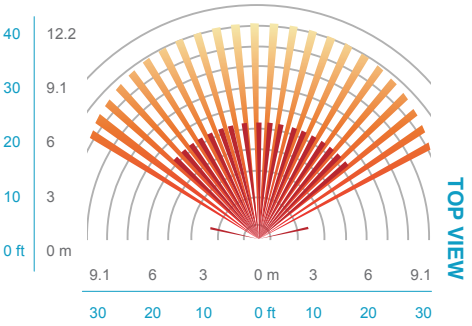
- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Wall-to-Wall coverage
- 30 to 48 in (76.20 to 121.92 cm) high mounting

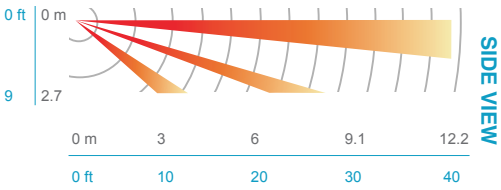




LWSH LARGE AREA WALL SWITCH LENS (HIGH MOUNT)

- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Wall-to-Wall coverage
- 48 to 84 in (121.92 to 213.36 cm) high mounting



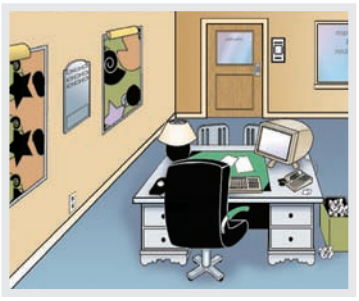


KEY SPECS

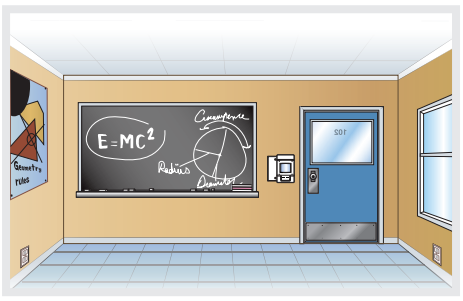
SERIES #	DETECTION	MOUNTING HEIGHT
LWS	PASSIVE INFRARED	30-48" (76.20-121.92cm)
LWSH	PASSIVE INFRARED	48-84" (121.92-213.36 cm)
LWS PDT	DUAL TECHNOLOGY	30-48" (76.20-121.92 cm)
LWSH PDT	DUAL TECHNOLOGY	48-84" (121.92-213.36 cm)

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

APPLICATIONS



LARGE PRIVATE OFFICE



LARGE CLASSROOM

OPTIONS

P INHIBIT PHOTOCELL
- Inhibit Operation: Prevents lights from turning on if adequate daylight available, but does not turn lights off
- Photocell in 2-Pole units only overrides 2nd pole

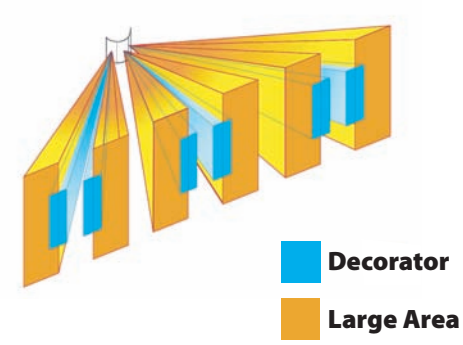
347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

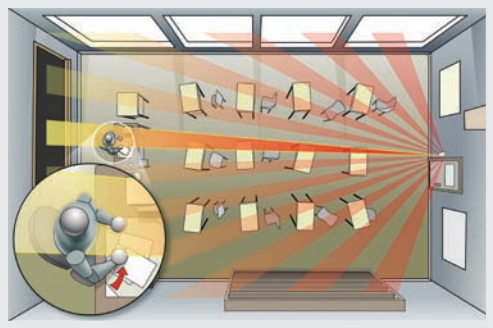
COLOR MUST BE SPECIFIED
- **WH** White
- **IV** Ivory

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20º C for PDT)

LARGE AREA WALL SWITCHES VS DECORATOR WALL SWITCHES

The optical focal length of a sensor's lens determines the size and spread of the Passive Infrared detection pattern. Decorator Wall Switch sensors use a half-inch focal length to generate large beams in short distances. The Large Area Wall Switch sensors use a one-inch focal length to maximize beam strength over greater distances.





PLATES

WS SPX I
WS SPX W

WS SPX3 I
WS SPX3 W

WS BPX I
WS BPX W

WS BPX3 I
WS BPX3 W

The WS BPX plate comes with all 2-Pole Models. Other plates ordered separately.

ORDERING BLOCK

SERIES #	# OF POLES	PHOTOCELL	VOLTAGE	COLOR	TEMP/HUMIDITY
LWS	**Blank** : 1-Pole	**Blank** : None	**Blank** : 120/277 VAC	**WH** : White	**Blank** : Standard
LWSH	**2P** : 2-Pole	**P** : Inhibit Photocell	**347** : 347 VAC	**IV** : Ivory	**LT** : Low Temp
LWS PDT					
LWSH PDT					

[SERIES] [# OF POLES] [PHOTOCELL] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : LWS 2P WH LT

STANDARD RANGE 360° SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
360° Coverage Pattern
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING Ceiling Tile Surface, 3.5" Octagon Box, or Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER SUPPLY
PP20 (Page 60)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 G

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Low voltage sensors with the Standard Range 360° lens offer amazing performance and sensitivity to small motions (e.g., hand movements). A single sensor can cover entire private offices or smaller rooms by itself. However, multiple sensors working together provide the ideal solution for covering oddly shaped rooms or large open office areas. For rooms with obstructions, these sensors are also available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. For longer range detection of walking type motions, see Extended Range 360° sensors on page 36.

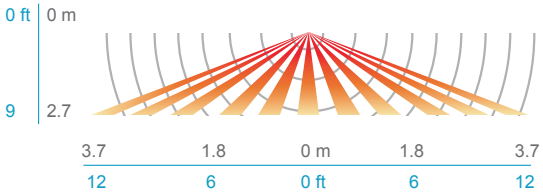
Low voltage sensors are powered with 12-24 VAC/VDC and operate with a power pack (model **PP20**), enabling complete 20 Amp circuits to be controlled. For line voltage Standard Range 360° sensors, see page 32.

COVERAGE PATTERN

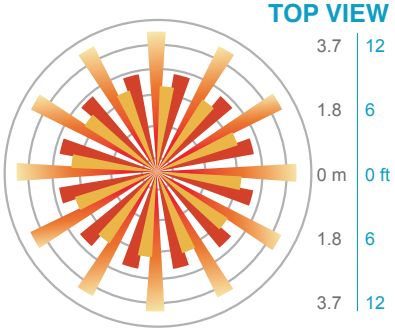
STANDARD RANGE 360° LENS

- Best choice for small motion **(e.g., hand movements)** detection
- Provides 12 ft (3.66 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on

SIDE VIEW



TOP VIEW



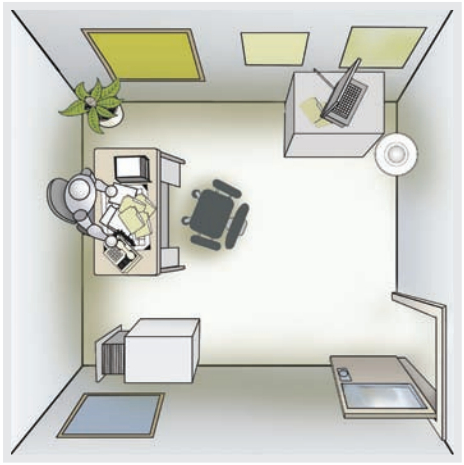
KEY SPECS

SERIES #	ENCLOSURE	DETECTION	POWER TYPE
CM 9	**CEILING MOUNT**	**PIR**	**12-24 VAC/VDC**
CM PDT 9	**CEILING MOUNT**	**DUAL TECH**	**12-24 VAC/VDC**
RM 9	**RECESSED MOUNT**	**PIR**	**12-24 VAC/VDC**
RM PDT 9	**RECESSED MOUNT**	**DUAL TECH**	**12-24 VAC/VDC**
CMB 9	**FIXTURE MOUNT BOX**	**PIR**	**12-24 VAC/VDC**
CMB PDT 9	**FIXTURE MOUNT BOX**	**DUAL TECH**	**12-24 VAC/VDC**

APPLICATIONS

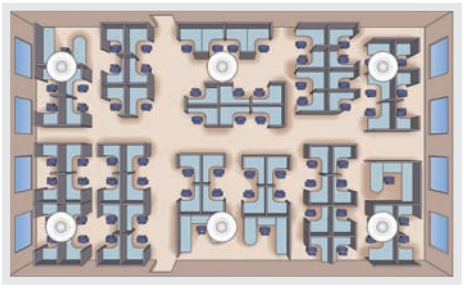
PRIVATE OFFICE

In spaces like private offices, it is best to locate the sensor along the entrance wall. This positioning ensures the occupant is detected immediately upon entering through the door, while preventing the detection of persons just passing by the door.



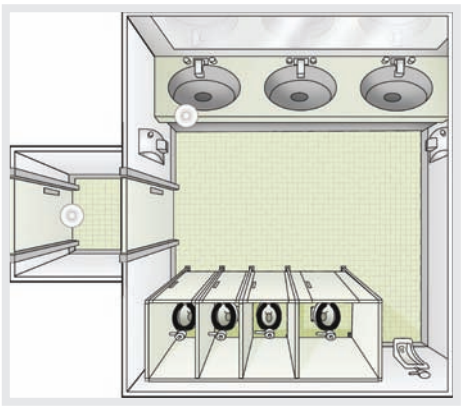
OPEN OFFICE SPACE

Open office spaces are best covered by positioning multiple Dual Technology sensors on 30 ft (9.14 m) centers. The sensors communicate with each other and the power pack such that occupancy detected by any of the sensors will switch and/ or keep the lights on. This configuration enables complete lighting circuits to be adequately controlled even if they cover large areas. Typically 6 to 8 sensors are used per circuit; however, up to 14 sensors may be connected to each power pack.



RESTROOM W/ VESTIBULE

This configuration illustrates sensors with different detection technologies being used collectively to cover a space. The sensor located in the vestibule uses PIR to detect and turn the lights on when the occupant first enters. The Dual Technology sensor located in the main stall area then keeps the lights on, even when the occupant is inside a stall. A 10-second grace period allows the lights to be voice reactivated, if needed.



OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

ADC PHOTOCELL W/ DIMMING
- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

Note: LampMaximizer+ features not available with ADC option

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20º C for PDT)

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	RELAY	DIMMING/PHOTOCELL*	TEMP/HUMIDITY
CM 9	**Blank** : None	**Blank** : None	**Blank** : Standard
CM PDT 9	**R** : Low Voltage Relay	**D** : Occupancy Controlled Dimming	**LT** : Low Temp
RM 9		**P** : Photocell	
RM PDT 9		**ADC** : Photocell w/ Dimming	
CMB 9			
CMB PDT 9			

* CHOOSE ONLY ONE

[SERIES] [RELAY] [DIMMING/PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : CM PDT 9 R P LT

STANDARD RANGE 360° SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection -
Excellent RF Immunity
360° Coverage Pattern
User Adjustable Time Delays
Self-Contained Relay,
No Power Pack Required
Interchangeable Hot & Load Wires,
Impossible to Wire Backwards
No Minimum Load
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm)
1.55" Deep (3.94 cm)
MOUNTING
3.5" Octagon Box or
Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D
(9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MINIMUM LOAD None
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 H

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Line voltage sensors with the Standard Range 360° lens offer amazing performance and sensitivity to small motions (e.g., hand movements), and are ideal for retrofit applications. Line voltage sensors are powered by and directly switch line voltage; therefore, no power packs are needed. These features make them perfect for applications where locating a power pack and running new wiring is difficult, or where a wall switch replacement is not feasible. For example, a small classroom or restroom with an inaccessible ceiling is easily and cost-effectively retrofit with a Standard Range 360° line voltage sensor. Information on 2-Pole versions of these sensors is found on page 34.

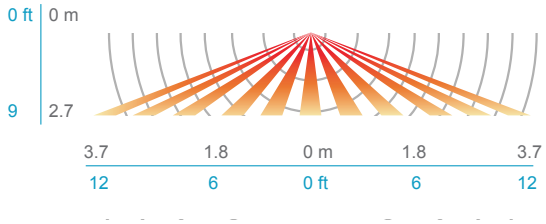
For rooms with obstructions, these sensors are available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. Information on line voltage sensors with a longer detection range of walking type motions can be found in the Extended Range 360° line voltage sensors section on page 38.

COVERAGE PATTERN

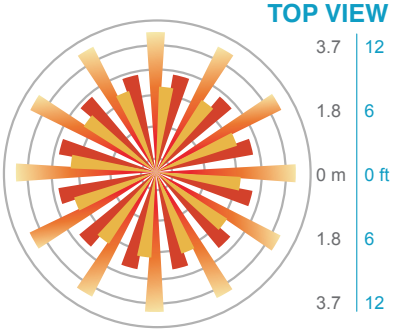
STANDARD RANGE 360° LENS

- Best choice for small motion **(e.g., hand movements)** detection
- Provides 12 ft (3.66 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on

SIDE VIEW



TOP VIEW

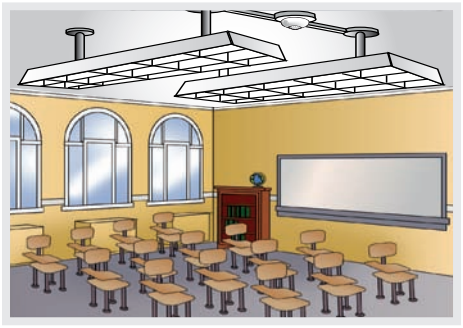


KEY SPECS

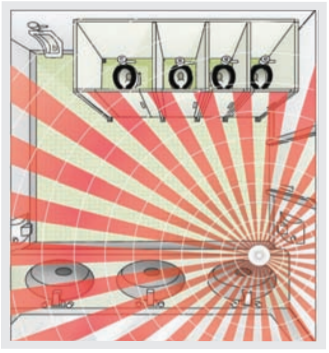
SERIES #	ENCLOSURE	DETECTION	POWER TYPE
CMR 9	CEILING MOUNT	PIR	120/277 VAC
CMR PDT 9	CEILING MOUNT	DUAL TECH	120/277 VAC
RMR 9	RECESSED MOUNT	PIR	120/277 VAC
RMR PDT 9	RECESSED MOUNT	DUAL TECH	120/277 VAC
CMRB 9	FIXTURE MOUNT BOX	PIR	120/277 VAC
CMRB PDT 9	FIXTURE MOUNT BOX	DUAL TECH	120/277 VAC

APPLICATIONS

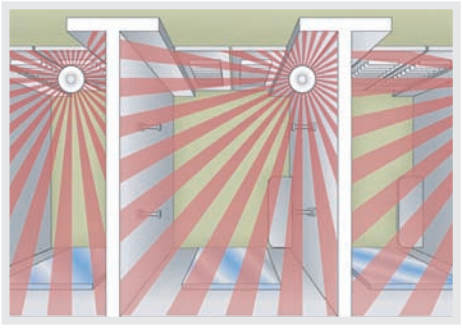
PRIVATE OFFICE
- Mount along entrance wall
- Used when a wall switch or low voltage ceiling sensor is not feasible



CLASSROOM
- High ceilings
- Integrates easily with existing surface raceway



RESTROOM
- Convenient for retrofits with hard lid ceilings
- Microphonics™ detects into stalls
- No power packs to accommodate



DRESSING ROOM / CLOSET
- Adds security
- Better than plunger switch
- Eliminates need for switch

OPTIONS

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

ADC PHOTOCELL W/ DIMMING
- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

Note: LampMaximizer+ features not available with ADC option

347 347 VOLTAGE
- Allows sensor to be powered and switch 347 VAC

LT LOW TEMPERATURE / HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20º C for PDT)

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TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	DIMMING/PHOTOCELL*	VOLTAGE	TEMP/HUMIDITY
CMR 9	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
CMR PDT 9	**D** : Occupancy Controlled Dimming	**347** : 347 VAC	**LT** : Low Temp
RMR 9	**P** : Photocell		
RMR PDT 9	**ADC** : Photocell w/ Dimming		
CMRB 9			
CMRB PDT 9			

* CHOOSE ONLY ONE

[SERIES] [DIMMING/PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR 9 P 347 LT

STANDARD RANGE 360º SENSORS
LINE VOLTAGE, 2-POLE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
360º Coverage Pattern
Adjustable Time Delays / Pole
2 Self-Contained Relays, No Power Packs Required
Interchangeable Hot & Load Wires, Impossible to Wire Backwards
No Minimum Load
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING 3.5" Octagon Box or Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
MAX LOAD / POLE (1 Phase Only)
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I

ENVIRONMENTAL SPECS
OPERATING TEMP 14º to 160º F (-10º to 71º C)
STORAGE TEMP -14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY 20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

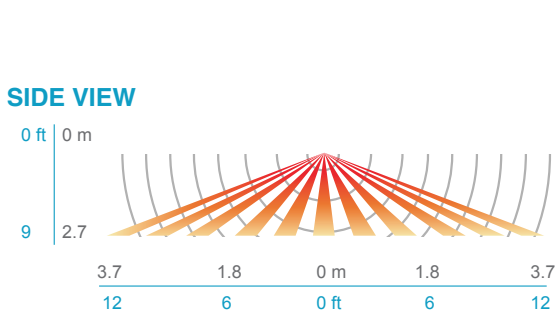
For rooms that need independent control of two circuits, 2-Pole sensors are the answer. These line voltage sensors are powered by and can directly switch two line voltage feeds; therefore, no power packs are needed. When coupled with a Standard Range 360º lens that provides amazing sensitivity to small motions (e.g., hand movements), these sensors are ideal for inboard/outboard switching applications in private offices, or controlling a light and fan in a small restroom.

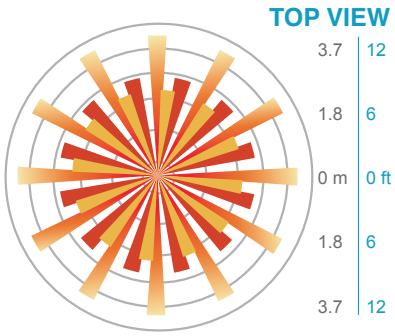
For rooms with obstructions, these sensors are available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. 2-Pole sensors with a longer detection range of walking type motions can be found in the 2-Pole Extended Range 360º sensors section on page 40.

COVERAGE PATTERN

STANDARD RANGE 360º LENS

- Best choice for small motion **(e.g., hand movements)** detection
- Provides 12 ft (3.66 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on





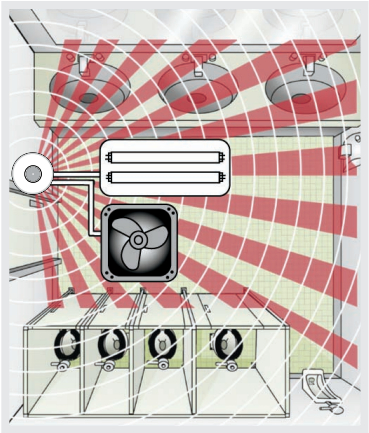
KEY SPECS

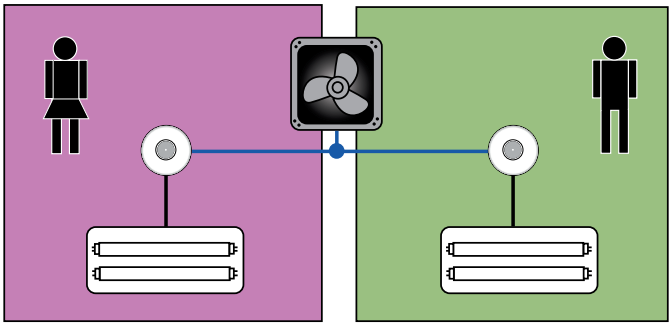
SERIES #	ENCLOSURE	DETECTION	POWER TYPE	RELAYS
CMR 9 2P	CEILING MOUNT	PIR	120/277 VAC	2
CMR PDT 9 2P	CEILING MOUNT	DUAL TECH	120/277 VAC	2
RMR 9 2P	RECESSED MOUNT	PIR	120/277 VAC	2
RMR PDT 9 2P	RECESSED MOUNT	DUAL TECH	120/277 VAC	2
CMRB 9 2P	FIXTURE MOUNT BOX	PIR	120/277 VAC	2
CMRB PDT 9 2P	FIXTURE MOUNT BOX	DUAL TECH	120/277 VAC	2

APPLICATIONS

MULTIPLE LOADS

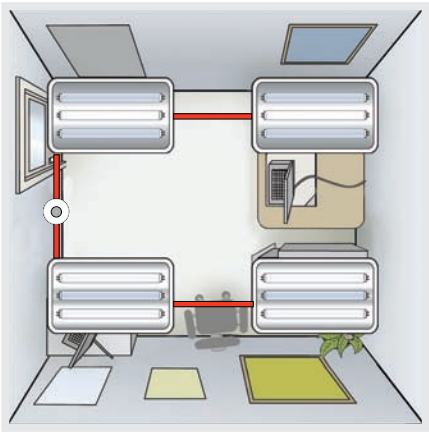
In this application, the overhead lights are controlled by the 1st pole, while the exhaust fan is controlled by the 2nd pole. Each pole can then be given its own time delay. For example, the lights can be turned off after a 10 minute delay, while the exhaust fan runs for 20 minutes. Also, if a common fan is used for multiple restrooms, installing a 2-Pole sensor in each with the 2nd poles wired in parallel will cause the fan to operate if either room is occupied.





INBOARD/OUTBOARD SWITCHING

The 2-Pole design allows for multi-level lighting control through inboard/outboard (A/B) switching. Utilizing two isolated power relays, these sensors provide 4 lighting levels: full on, load A only, load B only, or all off. Additionally, the local toggle switches may be wired before or after the sensor. This allows for installing the sensor on the load side of the switches. If either switch is on, the sensor is powered and functional.



OPTIONS

P INHIBIT PHOTOCELL
- Auto set-point calibration
- Photocell prevents lights from turning on if adequate daylight is available, but does not turn lights off
- Maintains two set-points, enabling separate control of both poles

DZ DUAL ZONE PHOTOCELL
- Auto set-point calibration
- Provides more advanced control than P option
- DUO Operation: Determines necessary on/off combination of poles in inboard/outboard applications
- Percentage Offset Operation: Uses relative set-point for second pole in Dual Zone applications

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20ºC for PDT)

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	PHOTOCELL*	VOLTAGE	TEMP/HUMIDITY
CMR 9 2P	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
CMR PDT 9 2P	**P** : Inhibit Photocell	**347** : 347 VAC	**LT** : Low Temp
RMR 9 2P	**DZ** : Dual Zone Photocell		
RMR PDT 9 2P			
CMRB 9 2P			
CMRB PDT 9 2P			

* CHOOSE ONLY ONE

[SERIES] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR 9 2P P LT

EXTENDED RANGE 360° SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
360° Coverage Pattern
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING Ceiling Tile Surface, 3.5" Octagon Box, or Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
OPERATING VOLTAGE 12-24 VAC/VDC
RECOMMENDED POWER PACK PP20 (Page 60)
CURRENT DRAW Standard, 4 mA w/ **R** option, 16 mA
DIMMING LOAD Sinks < 20mA; ~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 G

ENVIRONMENTAL SPECS
OPERATING TEMP 14° to 160° F (-10° to 71° C)
STORAGE TEMP -14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY 20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Sensors with the Extended Range 360° lens provide maximum viewing area from the ceiling. Designed to detect walking type motions, these sensors are ideal for placement along corridors or in rooms with ceiling heights as low as 7 ft (2.13 m). For classrooms and larger spaces, the Dual Technology versions add Microphonics™ detection to the Passive Infrared to additionally detect minor motions. For mounting above 15 ft (4.57 m) see the section on High Bay sensors (pages 46-53).

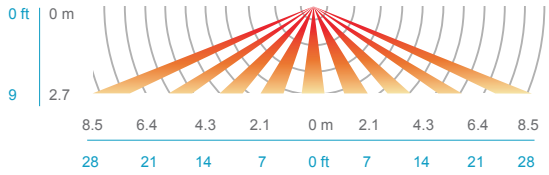
Low voltage sensors are powered with 12-24 VAC/VDC and operate with a power pack (model **PP20**), enabling complete 20 Amp circuits to be controlled. For line voltage Extended Range 360° sensors, see page 38.

COVERAGE PATTERN

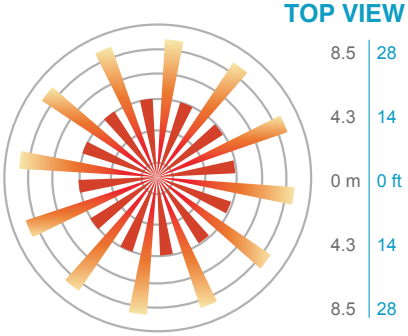
EXTENDED RANGE 360° LENS

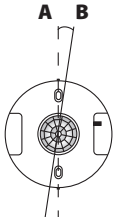
- Best choice for large motion **(e.g., walking)** detection
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on

SIDE VIEW

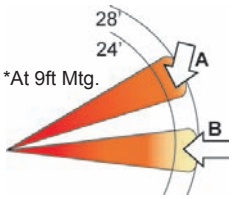


TOP VIEW





Note: For maximum detection distance, rotate the ceiling sensor clockwise so that the screw axis (**A**) is positioned 7.5° off the room's entrance axis (**B**)



A: When walking across a sensor's beam, detection will occur at approximately 28 ft (8.53 m)

B: When walking into a sensor's beam, detection will occur at approximately 24 ft (7.32 m)

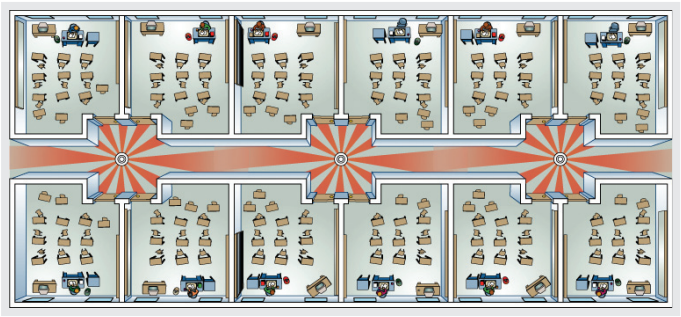
KEY SPECS

SERIES #	ENCLOSURE	DETECTION	POWER TYPE
CM 10	**CEILING MOUNT**	**PIR**	**12-24 VDC/VAC**
CM PDT 10	**CEILING MOUNT**	**DUAL TECH**	**12-24 VDC/VAC**
RM 10	**RECESSED MOUNT**	**PIR**	**12-24 VDC/VAC**
RM PDT 10	**RECESSED MOUNT**	**DUAL TECH**	**12-24 VDC/VAC**
CMB 10	**FIXTURE MOUNT BOX**	**PIR**	**12-24 VDC/VAC**
CMB PDT 10	**FIXTURE MOUNT BOX**	**DUAL TECH**	**12-24 VDC/VAC**

APPLICATIONS

CORRIDORS

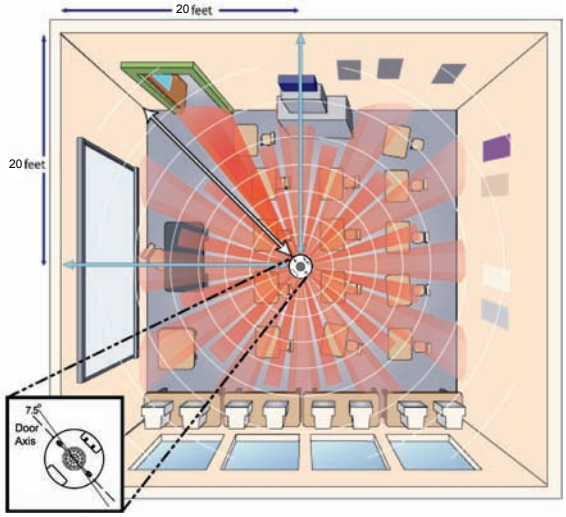
Hallways are an excellent application of Extended Range 360º low voltage sensors. For best results, locate sensors every 50 or 60 ft (15.24 or 18.29 m) and cover all entrance points. The choice of PIR vs. Dual Technology depends on the control strategy. For maximum energy savings, use only PIR detection so that the lights cycle off during class periods. If it is desired for the corridor lights to be on during school hours, Dual Technology sensors should be used, as the Microphonics™ will detect classroom activity and keep the lights on.



CLASSROOMS

A typical classroom can be controlled by one Extended Range 360º sensor with Dual Technology. Simply locate sensor the appropriate distance from the door entrance and align the mounting screws accordingly. No calibrations needed. The PIR detects right at the door threshold and turns the lights on.

Then the Microphonics™ engages, providing overlapping coverage of the entire room.



Location Guide	
Ceiling Height	**Distance in & over from door**
8 ft / 2.4 m	**17 ft / 5.2 m**
9 ft / 2.7 m	**20 ft / 6.1 m**
10 ft / 3.0 m	**22 ft / 6.7 m**

OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

ADC PHOTOCELL W/ DIMMING
- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

Note: LampMaximizer+ features not available with ADC option

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C (-4º F/ 20º C for PDT)

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TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #
CM 10
CM PDT 10
RM 10
RM PDT 10
CMB 10
CMB PDT 10

RELAY
Blank : None
R : Low Voltage Relay

DIMMING/PHOTOCELL*
Blank : None
D : Occupancy Controlled Dimming
P : Photocell
ADC : Photocell w/ Dimming

TEMP/HUMIDITY
Blank : Standard
LT : Low Temp

* CHOOSE ONLY ONE

[SERIES] [RELAY] [DIMMING/PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE:CM 10 P LT

EXTENDED RANGE 360° SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
360° Coverage Pattern
User Adjustable Time Delays
Self-Contained Relay, No Power Pack Required
Interchangeable Hot & Load Wires, Impossible to Wire Backwards
No Minimum Load
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING 3.5" Octagon Box or Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 H

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Line voltage sensors with the Extended Range 360° lens provide maximum viewing area from the ceiling and are ideal for retrofit applications. Line voltage sensors are powered by and directly switch line voltage; therefore, no power packs are needed. These features make them perfect for applications where locating a power pack and running new wiring are difficult, such as when plaster ceilings are present. Designed to detect walking type motions, Extended Range 360° sensors are ideal for placement along corridors or in rooms with ceilings from 15 ft (4.57 m) high to as low as 7 ft (2.13 m). 2-Pole versions of these sensors are also available on page 40.

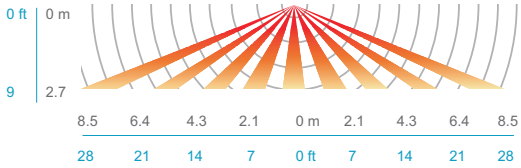
For rooms with obstructions, or where minor motion detection is also required, these sensors are available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. For mounting above 15 ft (4.57 m), see the High Bay sensors section beginning on page 46.

COVERAGE PATTERN

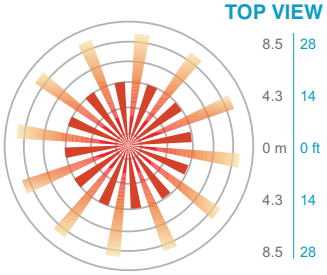
EXTENDED RANGE 360° LENS

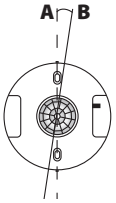
- Best choice for large motion **(e.g., walking)** detection
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on

SIDE VIEW

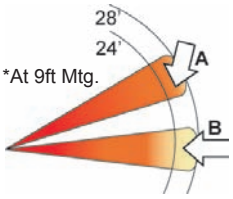


TOP VIEW





Note: For maximum detection distance, rotate the ceiling sensor clockwise so that the screw axis (**A**) is positioned 7.5° off the room's entrance axis (**B**)



A: When walking across a beam, detection will occur at approximately 28 ft (8.53 m)

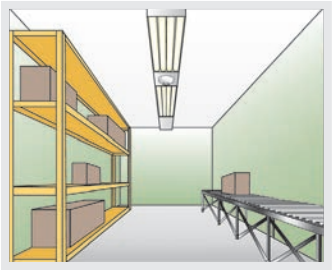
B: When walking into a beam, detection will occur at approximately 24 ft (7.32 m)

KEY SPECS

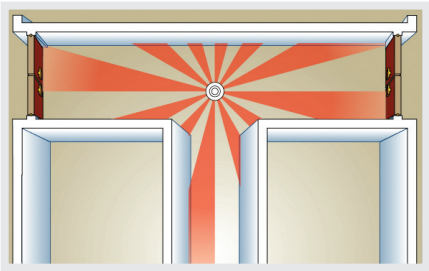
SERIES #	ENCLOSURE	DETECTION	POWER TYPE
CMR 10	**CEILING MOUNT**	**PIR**	**120/277 VAC**
CMR PDT 10	**CEILING MOUNT**	**DUAL TECH**	**120/277 VAC**
RMR 10	**RECESSED MOUNT**	**PIR**	**120/277 VAC**
RMR PDT 10	**RECESSED MOUNT**	**DUAL TECH**	**120/277 VAC**
CMRB 10	**FIXTURE MOUNT BOX**	**PIR**	**120/277 VAC**
CMRB PDT 10	**FIXTURE MOUNT BOX**	**DUAL TECH**	**120/277 VAC**

APPLICATIONS

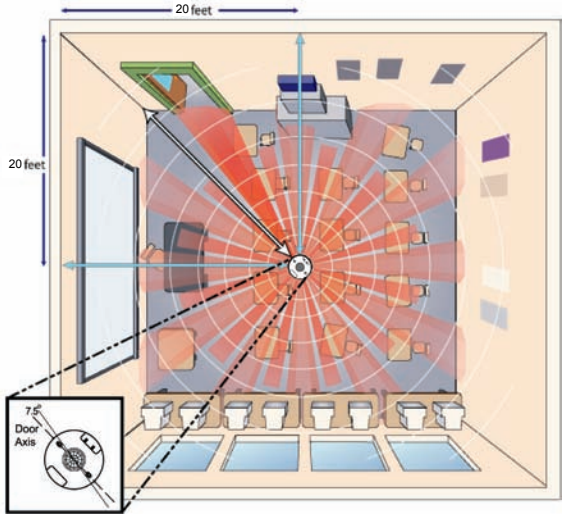
PICK AISLES W/ LOW CEILINGS
- 32 ft (9.75 m) coverage at 7 ft (2.13 m) ceiling height
- Mount sensor between two 16 ft (4.88 m) linear fixtures



CORRIDORS
- Sensors views 56 ft (17.07 m) at 9 ft (2.74 m) mounting
- Also ideal at corridor intersections



CLASSROOMS
A typical classroom can be controlled with one Extended Range 360º sensor with Passive Dual Technology. Locate the sensor the appropriate distance from the door entrance and align the mounting screws accordingly; no calibrations are necessary. The PIR will detect right at the door threshold and turns the lights on. Next, the Microphonic™ detection engages, providing overlapping coverage of the entire room.



Location Guide	
Ceiling Height	**Distance in & over from corner**
8 ft / 2.4 m	**17 ft / 5.2 m**
9 ft / 2.7 m	**20 ft / 6.1 m**
10 ft / 3.0 m	**22 ft / 6.7 m**

OPTIONS

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

ADC PHOTOCELL W/ DIMMING
- Auto set-point calibration
- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

Note: LampMaximizer+ features not available with ADC option

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40ºF/C (-4º F/ 20ºC for PDT)

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	DIMMING/PHOTOCELL*	VOLTAGE	TEMP/HUMIDITY
CMR 10	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
CMR PDT 10	**D** : Occupancy Controlled Dimming	**347** : 347 VAC	**LT** : Low Temp
RMR 10	**P** : Photocell		
RMR PDT 10	**ADC** : Photocell w/ Dimming		
CMRB 10			
CMRB PDT 10			

* CHOOSE ONLY ONE

[SERIES] [DIMMING/PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR 10 P 347 LT

EXTENDED RANGE 360º SENSORS
LINE VOLTAGE, 2-POLE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
360º Coverage Pattern
Adjustable Time Delays / Pole
2 Self-Contained Relays, No Power Packs Required
Interchangeable Hot & Load Wires, Impossible to Wire Backwards
No Minimum Load
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)

PHYSICAL SPECS
WEIGHT 6 oz
COLOR White
CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING 3.5" Octagon Box or Single Gang Handy Box
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS
MAX LOAD / POLE (1 Phase Only)
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I

ENVIRONMENTAL SPECS
OPERATING TEMP 14º to 160º F (-10º to 71º C)
STORAGE TEMP -14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY 20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

For larger rooms or corridors that need independent control of two circuits, 2-Pole sensors with the Extended Range 360º lens are the answer. These line voltage sensors are powered by and can directly switch two line voltage feeds; therefore, no power packs are needed. They provide maximum viewing of walking type motions from the ceiling, making them ideal for inboard/outboard switching applications in storage area aisles, or controlling a light and fan in a large restroom.

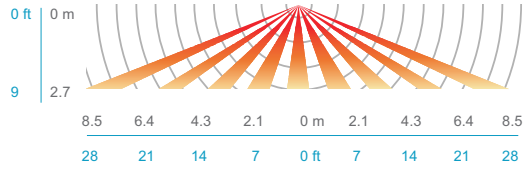
Adding Dual Technology also makes these sensors perfect for classrooms with two switches. Dual Technology adds Microphonics™ to the Passive Infrared (PIR), creating excellent detection of minor motions.

COVERAGE PATTERN

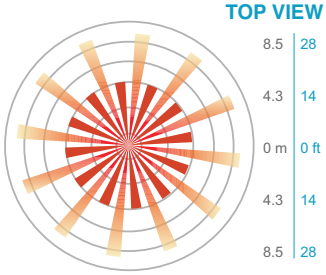
EXTENDED RANGE 360º LENS

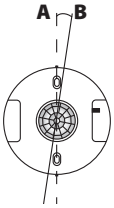
- Best choice for large motion **(e.g., walking)** detection
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on

SIDE VIEW

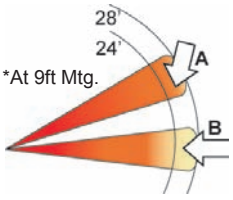


TOP VIEW





Note: For maximum detection distance, rotate the ceiling sensor clockwise so that the screw axis (**A**) is positioned 7.5° off the room's entrance axis (**B**)



A: When walking across a beam, detection will occur at approximately 28 ft (8.53 m)

B: When walking into a beam, detection will occur at approximately 24 ft (7.32 m)

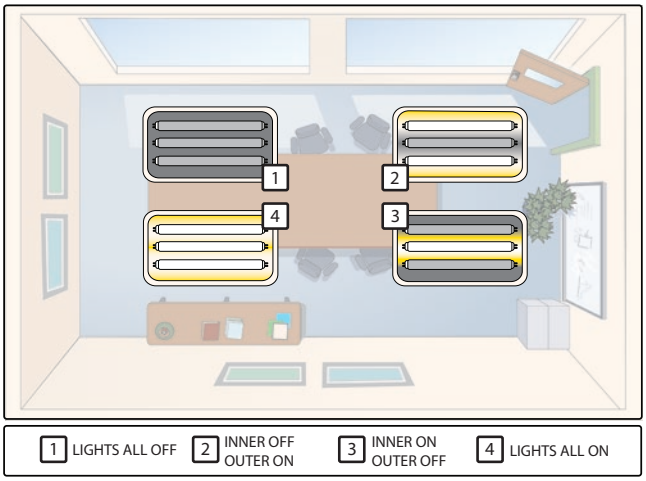
KEY SPECS

SERIES #	ENCLOSURE	DETECTION	POWER TYPE	RELAYS
CMR 10 2P	CEILING MOUNT	PIR	120/277 VAC	2
CMR PDT 10 2P	CEILING MOUNT	DUAL TECH	120/277 VAC	2
RMR 10 2P	RECESSED MOUNT	PIR	120/277 VAC	2
RMR PDT 10 2P	RECESSED MOUNT	DUAL TECH	120/277 VAC	2
CMRB 10 2P	FIXTURE MOUNT BOX	PIR	120/277 VAC	2
CMRB PDT 10 2P	FIXTURE MOUNT BOX	DUAL TECH	120/277 VAC	2

APPLICATIONS

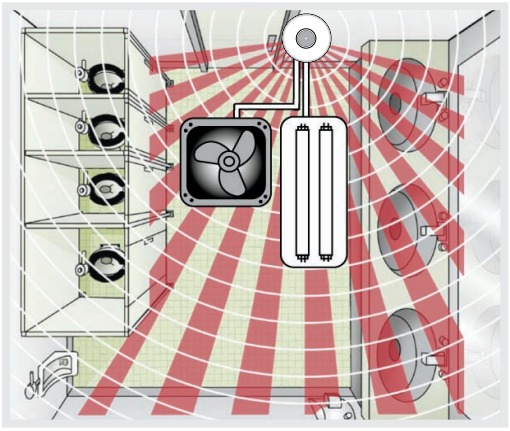
INBOARD/OUTBOARD SWITCHING

The 2-Pole design allows for multi-level lighting control through inboard/outboard (A/B) switching. Utilizing two isolated power relays, these sensors provide four levels of control: full on, load A only, load B only, or all off. Additionally, the local toggle switches may be wired before or after the sensor. This allows for installing the sensor on the load side of the switches. If either switch is on, the sensor is powered and functional.



CONTROLLING MULTIPLE LOADS

In this application, the overhead lights are controlled by the 1st pole, while the exhaust fan is controlled by the 2nd pole. Each pole can then be given its own time delay. For example, the lights can be turned off after 10 minutes, while the exhaust fan runs for 20 minutes.



OPTIONS

P INHIBIT PHOTOCELL
- Auto set-point calibration
- Photocell prevents lights from turning on if adequate daylight is available, but does not turn lights off
- Maintains two set-points, enabling separate control of both poles

DZ DUAL ZONE PHOTOCELL
- Auto set-point calibration
- Provides more advanced control than P option
- DUO Operation: Determines necessary On/Off combination of poles in Inboard/Outboard applications
- Percentage Offset Operation: Uses relative set-point for second pole in Dual Zone applications

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40ºF/C (-4º F/ 20ºC for PDT)

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #

CMR 10 2P
CMR PDT 10 2P
RMR 10 2P
RMR PDT 10 2P
CMRB 10 2P
CMRB PDT 10 2P

PHOTOCELL*

Blank : None
P : Inhibit Photocell
DZ : Dual Zone Photocell

* CHOOSE ONLY ONE

VOLTAGE

Blank : 120/277 VAC
347 : 347 VAC

TEMP/HUMIDITY

Blank : Standard
LT : Low Temp

[SERIES] [PHOTOCELL] [VOLTAGE] [TEMP /HUMIDITY]

EXAMPLE: CMR 10 2P LT

WIDE VIEW SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS

CORNER MOUNT ENCLOSURE
SIZE 3.00" H x 3.60" W x 1.75" D (7.62 cm x 9.14 cm x 4.55 cm)
WEIGHT 4 oz
MOUNTING Directly to Corner or to Ceiling using WV BR bracket
COLOR White

ELECTRICAL SPECS

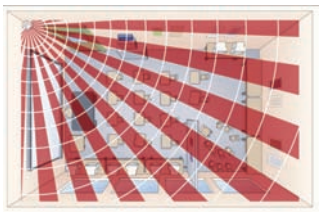
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER SUPPLY
PP20 (Page 60)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
WIRING DIAGRAM Page 86 N

ENVIRONMENTAL SPECS

OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Low voltage Wide View sensors are designed to mount in a corner and detect small motions up to 40 ft (12.19 m) away, and larger motions up to 70 ft (21.33 m) away. This makes them ideal for 30 ft (9.14 m) x 30 ft (9.14 m) classrooms or corridors up to 70 ft (21.33 m) long. The enclosure's convenient tilting feature enables the sensor to be mounted at any height from 8 to 10 ft (2.44 to 3.05 m). When corner or wall mounting is not possible, the WV BR ceiling bracket accessory can also be used to mount the sensor to the ceiling.

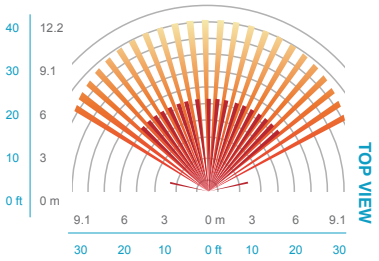


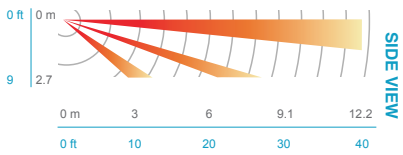
These sensors can be used in combination with other low voltage sensors to cover oddly shaped rooms. For rooms with obstructions, Wide View sensors are available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. Low voltage sensors are powered with 12-24 VAC/VDC and operate with a power pack (model **PP20**), enabling complete 20 Amp circuits to be controlled. For line voltage Wide View sensors, see page 43.

COVERAGE PATTERN

WIDE VIEW LENS

- Small motion **(e.g., hand movements)** detection up to 40 ft (12.19 m)
- Large motion **(e.g., walking)** detection up to 70 ft (21.33 m)
- Designed for 8 to 10 ft (2.44 to 3.05 m) high mounting in room corner
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on





OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40° F/C (-4° F / 20° C for PDT)

CEILINGMOUNTBRACKET

WV BR*

* Redesigned for easier installation

SIZE 4.70" Dia. (11.94 cm) 3.30" Deep (8.38 cm)
MOUNTING Ceiling Tile Surface, 3.5" Octagon Box, or Single Gang Handy Box

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

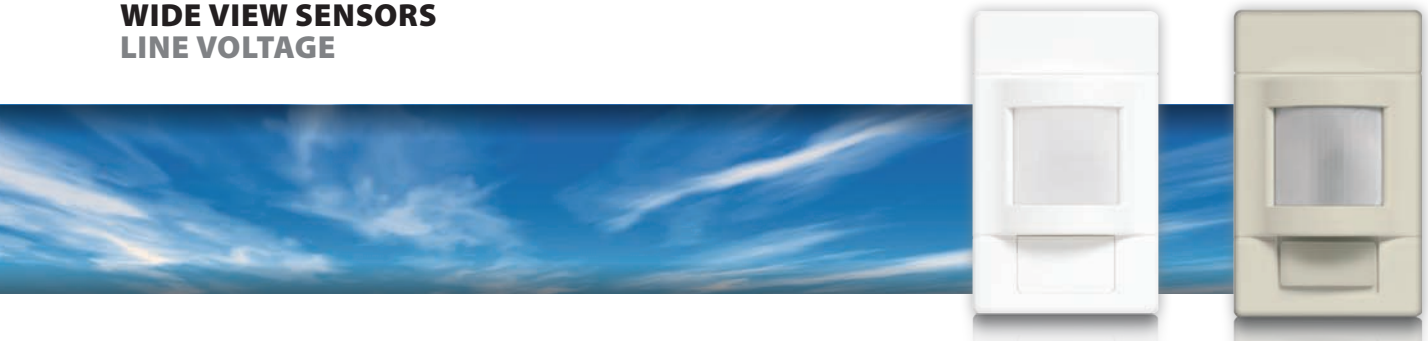
ORDERING BLOCK

SERIES #	RELAY	PHOTOCELL	TEMP/HUMIDITY
WV 16	**Blank** : None	**Blank** : None	**Blank** : Standard
WV PDT 16	**R** : Low Voltage Relay	**P** : Photocell	**LT** : Low Temp

[SERIES] [RELAY] [PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : WV PDT 16 P

WIDE VIEW SENSORS
LINE VOLTAGE



SPECIFICATIONS

FEATURES
Adjustable Time Delay
No Neutral Required
Self-Contained Relay(s),
No Power Pack(s) Needed
Interchangeable Hot & Load Wires
Relay Protection
No Minimum Load
Green LED Indicator

PHYSICAL SPECS
SURFACE MOUNT ENCLOSURE
SIZE 4.96"H x 3.10" W x 1.70" D
(12.60 cm x 7.87 cm x 4.32 cm)
WEIGHT 7 oz
MOUNTING Single Gang Switch Box
(add Wiremold Box #V5719 for corner mounting)
MOUNTING HEIGHT 7-8 ft (2.13-2.44 m)
COLOR White, Ivory

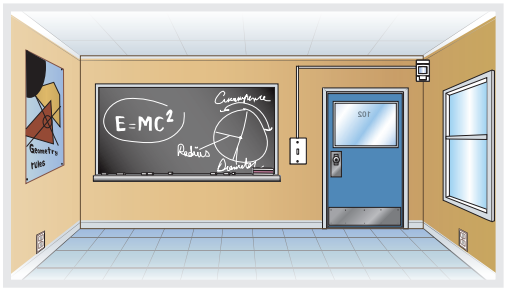
ELECTRICAL SPECS
MAX LOAD / POLE (1 Phase only)
13 Amps at 120-347 VAC
FREQUENCY 50/60 Hz
MOTOR LOAD 1/4 HP each pole
WIRING DIAGRAM Page 86 O-P

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 85º F (-10º to 29º C)
STORAGE TEMP
-14º to 85º F (-26º to 29º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT
(non-photocell versions)

c UL us LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

Line voltage Wide View sensors mount in a corner, are designed to detect small motions up to 40 ft (12.19 m) away, and are ideal for retrofit applications. Line voltage sensors are powered by and directly switch line voltage; therefore, no power packs are needed. Additionally, these sensors do not require a neutral, making wiring directly off local switches with wiremold a convenient option. Together, these features make them perfect for retrofit applications where running new wiring is difficult.



For rooms with obstructions, Wide View sensors are available with Dual Technology, which adds Microphonics™ detection to the Passive Infrared (PIR) detection. For rooms that need independent control of two circuits, 2-Pole units are available.

OPTIONS

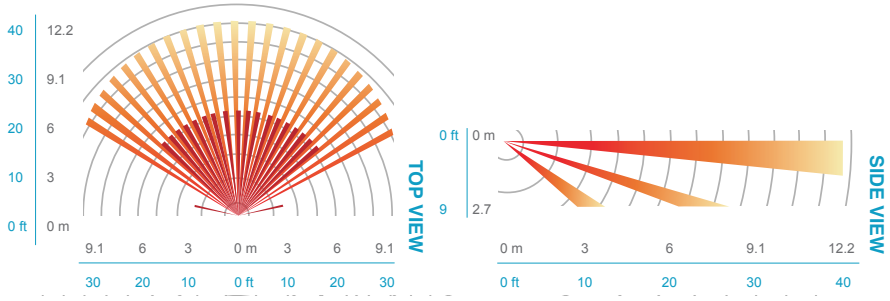
P INHIBIT PHOTOCELL
- Photocell prevents lights from turning on if adequate daylight is available, but does not turn lights off
- Maintains two set-points enabling separate control of both poles

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C
(-4º F / 20º C for PDT)

COVERAGE PATTERN

WIDE VIEW LENS
- Small motion detection up to 40 ft (12.19m)
- Large motion detection up to 70 ft (21.33 m)
- Designed for 8 to 10 ft (2.44 to 3.05 m) high mounting in room corner
- Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area
- Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on



ORDERING BLOCK

SERIES #	POLES	PHOTOCELL	VOLTAGE	COLOR	TEMP/HUMIDITY
WVR 16	**Blank** : 1-Pole	**Blank** : None	**Blank** : 120/277 VAC	**WH** : White	**Blank** : Standard
WVR PDT 16	**2P** : 2-Pole	**P** : Inhibit Photocell	**347** : 347 VAC	**IV** : Ivory	**LT** : Low Temp

[SERIES] [POLES] [PHOTOCELL] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : WVR 16 2P P WH LT

HALLWAY SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES
100% Digital PIR Detection - Excellent RF Immunity
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

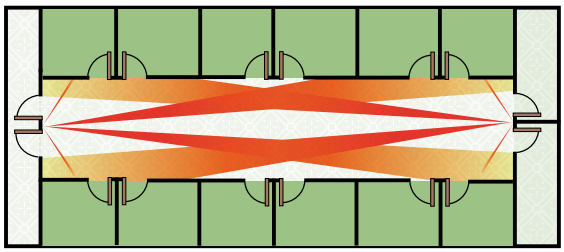
PHYSICAL SPECS
WALL MOUNT ENCLOSURE
SIZE 3.00" H x 3.60" W x 1.75" D (7.62 cm x 9.14 cm x 4.55 cm)
WEIGHT 4 oz
MOUNTING Directly to Wall or to Ceiling using WV BR bracket
COLOR White

ELECTRICAL SPECS
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER SUPPLY
PP20 (Page 60)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
WIRING DIAGRAM Page 86 N

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Low voltage Hallway sensors are designed for long narrow applications, such as corridors. Typically mounted at either end, these sensors detect occupants entering the hallway up to 130 ft (39.62 m) away. The wall mount enclosure's convenient tilting feature enables this sensor to be mounted at any height from 7 to 10 ft (2.13 to 3.05 m). When wall mounting is not possible, the WV BR ceiling bracket accessory can be used to mount the sensor to the ceiling.

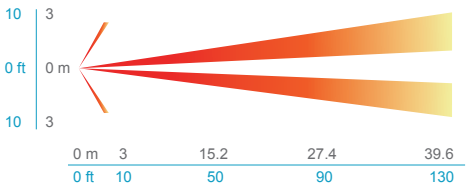


These sensors can be used in combination with other low voltage sensors to cover oddly shaped areas. Low voltage sensors are powered with 12-24 VAC/VDC and operate with a power pack (model **PP20**), enabling complete 20 Amp circuits to be controlled. For line voltage Hallway sensors, see page 45.

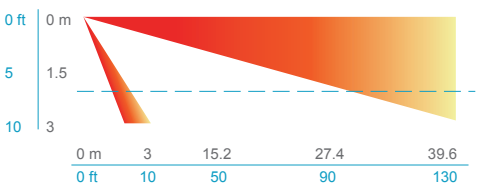
COVERAGE PATTERN

HALLWAY VIEW LENS
- Large motion **(e.g., walking)** detection up to 130 ft (39.62 m)
- Designed for 7 ft (2.13 m) high mounting at end of hallway
- Should always be applied in pairs facing each other

TOP VIEW



SIDE VIEW



OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40°F/C

CEILINGMOUNTBRACKET

WV BR*

* Redesigned for easier installation

SIZE 4.70" Dia. (11.94 cm)
3.30" Deep (8.38 cm)
MOUNTING Ceiling Tile Surface, 3.5" Octagon Box, or Single Gang Handy Box

ORDERING BLOCK

SERIES #	RELAY	PHOTOCELL	TEMP/HUMIDITY
HW13	**Blank** : None **R** : Low Voltage Relay	**Blank** : None **P** : Photocell	**Blank** : Standard **LT** : Low Temp

[SERIES] [RELAY] [PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : HW13 R P LT

HALLWAY SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES
Adjustable Time Delay
No Neutral Required
Self-Contained Relay,
No Power Pack Required
No Minimum Load
Green LED Indicator

PHYSICAL SPECS
SURFACE MOUNT ENCLOSURE
SIZE 4.96"H x 3.10" W x 1.70" D
(12.60 cm x 7.87 cm x 4.32 cm)
WEIGHT 7 oz
MOUNTING Single Gang Switch Box
COLOR White, Ivory

ELECTRICAL SPECS
MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 86 Q

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 85º F (-10º to 29º C)
STORAGE TEMP
-14º to 85º F (-26º to 29º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Line voltage Hallway sensors are designed for long narrow corridors and are ideal for retrofit applications. Typically mounted at either end, these sensors detect occupants entering the hallway up to 130 ft away. Line voltage sensors are powered by and directly switch line voltage; therefore, no power packs are needed. Additionally, these sensors do not require a neutral, making wiring directly off local switches with wiremold a convenient option. Multiple units can also be wired in parallel. Together, these features make them perfect for retrofit applications where running new wiring is difficult.

OPTIONS

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

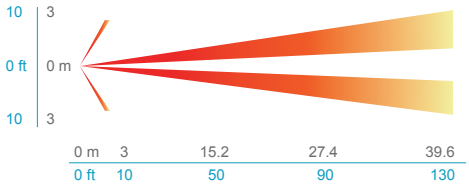
LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C

COVERAGE PATTERN

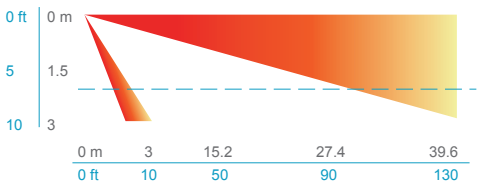
HALLWAY VIEW LENS

- Large motion **(e.g., walking)** detection up to 130 ft (39.62 m)
- Designed for 7 ft (2.13 m) high mounting at end of hallway
- Should always be applied in pairs facing each other

TOP VIEW



SIDE VIEW



c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #	VOLTAGE	COLOR	TEMP/HUMIDITY
HWR13	**Blank** : 120/277 VAC **347** : 347 VAC	**WH**: White **IV** : Ivory	**Blank** : Standard **LT** : Low Temp

[SERIES] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : HWR13 347 WH LT

HIGH BAY 360º SENSORS

SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS

WEIGHT 6 oz
COLOR White

CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
MOUNTING 3.5" Octagon Box or Single Gang Handy Box

RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
MOUNTING Recesses into a 4" x 4" square junction box

FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
MOUNTING 1/2" knockout

ELECTRICAL SPECS

LOW VOLTAGE
OPERATING VOLTAGE 12-24 VAC/VDC
RECOMMENDED POWER SUPPLY PP20 or PP20 SH (Page 60 or 63)
CURRENT DRAW Standard, 4 mA w/ **R** option, 16 mA
DIMMING LOAD Sinks < 20mA; ~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 J

LINE VOLTAGE
MAX LOAD / POLE
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
5 Amps @ 208/240 VAC
5 Amps @ 480 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I,K; 86 L

ENVIRONMENTAL SPECS

OPERATING TEMP 14º to 160º F (-10º to 71º C)
STORAGE TEMP -14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY 20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

Designed for mounting heights of up to 45 ft (13.72 m), High Bay 360º sensors have a 15-20 ft (4.57-6.10 m) radial coverage pattern that overlaps the area lit by a typical high bay fixture. Applications include warehouses, racquetball courts, and gymnasiums. Individual fixture control is best handled by line voltage sensors, while multiple fixture control is best handled by one or more low voltage sensors and a power pack. These sensors are ideal for on/off control of T5/T8 fluorescent lighting. However, HID bi-level fixtures can also be controlled when the Start-to-High **(SH)** option is added to line voltage models, or a **PP20 SH** power pack is used with low voltage models.

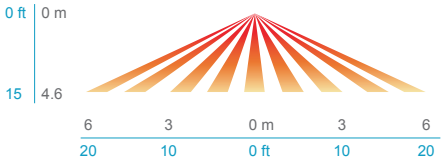
2-Pole High Bay 360º sensors are also available, as are units designed for switching 208 & 480 VAC lighting. For sensors with Aisleway or End-of-Aisle coverage patterns, see pages 48-51.

COVERAGE PATTERN

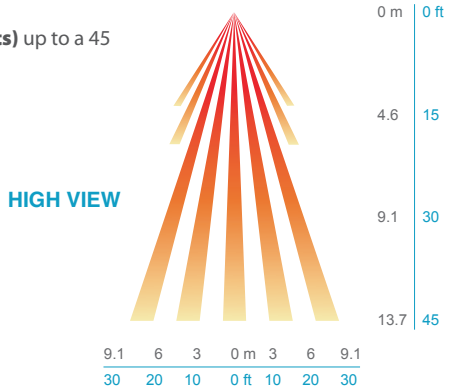
HIGH BAY 360º VIEW LENS

- Best choice for 15 to 45 ft (4.57-13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion **(e.g., walking)** up to a 35 ft (10.67 m) mounting height
- Excellent detection of extra large motion **(e.g., forklifts)** up to a 45 ft (13.72 m) mounting height

LOW VIEW



HIGH VIEW

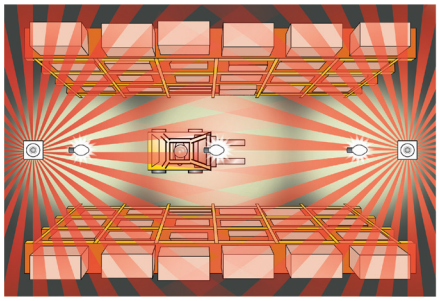


KEY SPECS

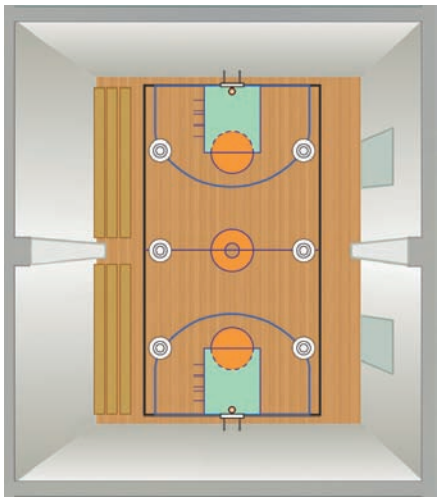
SERIES #	ENCLOSURE	DETECTION	POWER TYPE	RELAYS
CM 6	CEILING MOUNT	PIR	12-24 VDC/VAC	-
RM 6	RECESSED MOUNT	PIR	12-24 VDC/VAC	-
CMB 6	FIXTURE MOUNT BOX	PIR	12-24 VDC/VAC	-
CMR 6	CEILING MOUNT	PIR	120/277 VAC	1
RMR 6	RECESSED MOUNT	PIR	120/277 VAC	1
CMRB 6	FIXTURE MOUNT BOX	PIR	120/277 VAC	1
CMR 6 2P*	CEILING MOUNT	PIR	120/277 VAC	2
RMR 6 2P*	RECESSED MOUNT	PIR	120/277 VAC	2
CMRB 6 2P*	FIXTURE MOUNT BOX	PIR	120/277 VAC	2
CMR 6 208	CEILING MOUNT	PIR	208/240 VAC	2**
RMR 6 208	RECESSED MOUNT	PIR	208/240 VAC	2**
CMRB 6 208	FIXTURE MOUNT BOX	PIR	208/240 VAC	2**
CMR 6 480	CEILING MOUNT	PIR	480 VAC	2**
RMR 6 480	RECESSED MOUNT	PIR	480 VAC	2**
CMRB 6 480	FIXTURE MOUNT BOX	PIR	480 VAC	2**

* LampMaximizer+ features not available
** Relays switch together

APPLICATIONS



WAREHOUSE



GYMNASIUM

OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

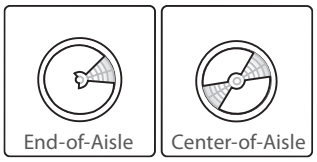
SH START-TO-HIGH
- Upon power up sensor holds lights on and high for 20 min

P & PD PHOTOCELL
- Photocell with **(P)** option views up through rear of fixture mount box sensors and down through lens of ceiling and recessed mount sensors
- Down-viewing photocell option (**PD**) also available for **CMB 6**, **CMRB 6**, **CMRB 6 2P**, **CMRB 6 208,** & **CMRB 6 480** series sensors
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell prevents lights from turning on if adequate daylight is available, but does not turn the lights off
- 2-Pole units with down-viewing photocells operate in inhibit mode only

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion-resistant to moisture
- Operates down to -40º F/C

HIGH BAY 360° MASKING LABELS

These labels (included) enable masking off a portion of the view pattern for end-of-aisle applications or trimming the sensor's side viewing to create a rectangular pattern for center-of-aisle viewing only.



c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

LOW VOLTAGE

SERIES #	RELAY	DIMMING	PHOTOCELL	TEMP/HUMIDITY
CM 6	**Blank** : None	**Blank** : None	**Blank** : None	**Blank** : Standard
RM 6	**R** : Low Voltage Relay	**D** : Occupancy Controlled Dimming	**P (PD)** : Photocell	**LT** : Low Temp
CMB 6				

[SERIES] [RELAY] [DIMMING] [PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : CMB 6 R P LT

LINE VOLTAGE

SERIES #	START-TO-HIGH	DIMMING	PHOTOCELL	VOLTAGE	TEMP/HUMIDITY
CMR 6	**Blank** : None	**Blank** : None	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
RMR 6	**SH** : w/ STH	**D** : Occupancy Controlled Dimming	**P (PD)** : Photocell	**347** : 347 VAC	**LT** : Low Temp
CMRB 6					

[SERIES] [START-TO-HIGH] [DIMMING] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMRB 6 SH P 347 LT

LINE VOLTAGE : 2-POLE

SERIES #	PHOTOCELL	VOLTAGE	TEMP/HUMIDITY
CMR 6 2P	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
RMR 6 2P	**P (PD)** : Photocell	**347** : 347 VAC	**LT** : Low Temp
CMRB 6 2P			

[SERIES] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMRB 6 2P P 347 LT

LINE VOLTAGE : 208/240, 480 VAC

SERIES #	PHOTOCELL	TEMP/HUMIDITY
CMR 6 208	**Blank** : None	**Blank** : Standard
CMR 6 480	**P (PD)** : Photocell	**LT** : Low Temp
RMR 6 208		
RMR 6 480		
CMRB 6 208		
CMRB 6 480		

[SERIES] [PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : CMRB 6 480 P LT

HIGH BAY AISLEWAY SENSORS

SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity*
User Adjustable Time Delays
Push-Button Programmable*
Convenient Test Mode*
100 hr Lamp Burn-in Timer*
Green LED Indicator
Lens Turret Rotates 90°*

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS

SURFACE MOUNT
SIZE 4.96"H x 3.10" W x 1.70" D (12.60 cm x 7.87 cm x 4.32 cm)
WEIGHT 7 oz
MOUNTING Single Gang Switch Box
COLOR White, Ivory

RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
WEIGHT 6 oz
MOUNTING Recesses into a 4" x 4" square junction box
COLOR White

FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

ELECTRICAL SPECS

LOW VOLTAGE
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER SUPPLY
PP20 or PP20 SH (Page 60 or 63)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 J; 86 R

LINE VOLTAGE
MAX LOAD / POLE
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
5 Amps @ 208/240 VAC
5 Amps @ 480 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I, K; 86 L, M

OVERVIEW

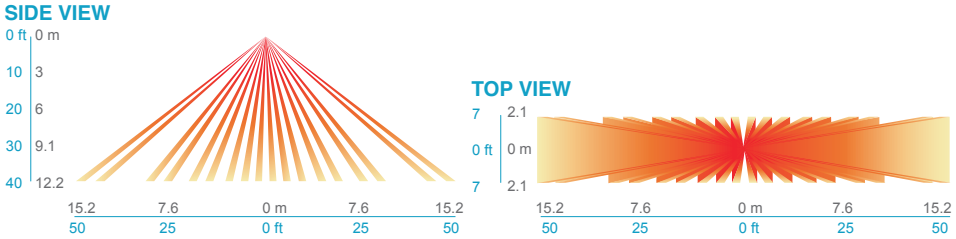
High Bay Aisleway sensors provide bi-directional coverage extending 70-110 ft (21.34 - 33.53 m) when mounted at heights of 30-45 ft (9.14-13.72 m). The sensor's view pattern covers the area lit by three typically spaced high bay fixtures. Therefore, when mounted at a fixture, the coverage area extends out to the area that is lit by the neighboring fixtures. This effect is useful with some program-start ballasts that have a delay, such that when traveling in a forklift truck, lighting needs to be initiated ahead of the truck.

Individual fixture control is best handled by line voltage sensors, while multiple fixture control is best handled by one or more low voltage sensors and a **PP20** power pack. 2-Pole High Bay Aisleway sensors are also available, as are units designed for switching 208/240, or 480 VAC lighting. While ideal for on/off control of T5/T8 fluorescent lighting, HID bi-level fixtures can also be controlled when the Start-to-High **(SH)** option is added to line voltage models, or a **PP20 SH** power pack is used with low voltage models.

COVERAGE PATTERN

HIGH BAY AISLEWAY LENS

- Provides 50° bi-directional and 10° wide coverage pattern
- 1.2 x mounting height equals approximate detection range in either direction
- Typical 40 ft (12.19 m) mounting detects 50 ft (15.24 m) in either direction



MASKING LABELS

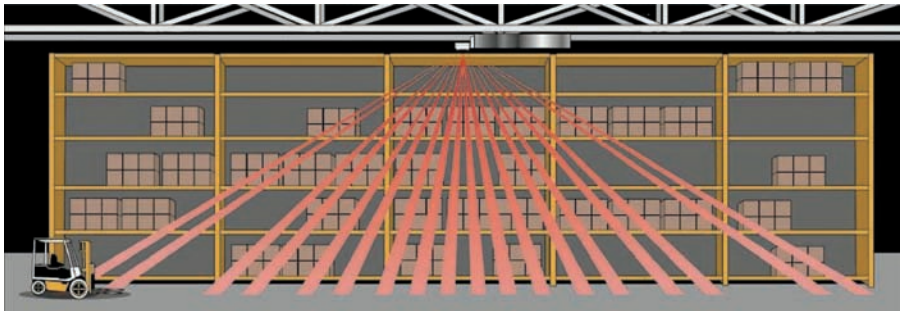
- Masking labels are provided with the sensor in order to mask off a portion of the view pattern for end-of-aisle applications

KEY SPECS

SERIES #	ENCLOSURE	DETECTION	POWER TYPE	RELAYS
HM 50	SURFACE MOUNT	PIR	12-24 VDC/VAC	-
RM 50	RECESSED MOUNT	PIR	12-24 VDC/VAC	-
CMB 50	FIXTURE MOUNT BOX	PIR	12-24 VDC/VAC	-
HMR 50	SURFACE MOUNT	PIR	120/277 VAC	1
RMR 50	RECESSED MOUNT	PIR	120/277 VAC	1
CMRB 50	FIXTURE MOUNT BOX	PIR	120/277 VAC	1
RMR 50 2P**	RECESSED MOUNT	PIR	120/277 VAC	2
CMRB 50 2P**	FIXTURE MOUNT BOX	PIR	120/277 VAC	2
RMR 50 208	RECESSED MOUNT	PIR	208/240 VAC	2***
CMRB 50 208	FIXTURE MOUNT BOX	PIR	208/240 VAC	2***
RMR 50 480	RECESSED MOUNT	PIR	480 VAC	2***
CMRB 50 480	FIXTURE MOUNT BOX	PIR	480 VAC	2***

* Not applicable for HM(R) 50 Series
** LampMaximizer+ features not available
*** Relays switch together

APPLICATIONS



ENVIRONMENTAL SPECS

OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

90° LENS ROTATION

- The sensor's lens turret rotates 90° in order to easily adjust the direction of the view pattern

OPTIONS

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

SH START-TO-HIGH
- Upon power up, sensor holds lights on and high for 20 min

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

P PHOTOCELL
- Auto set-point calibration
- Two selectable modes of operation
- On/Off Mode: Photocell has full control during periods of occupancy
- Inhibit Mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn the lights off

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Power Pack is corrosion resistant to moisture
- Operates down to -40º F/C

ORDERING BLOCK

LOW VOLTAGE

SERIES #	RELAY	DIMMING†	PHOTOCELL††	COLOR†††	TEMP/HUMIDITY
HM 50	**Blank** : None	**Blank** : None	**Blank** : None	**WH** : White	**Blank** : Standard
RM 50	**R** : Low Voltage Relay	**D** : Occupancy Controlled Dimming	**P** : Photocell	**IV** : Ivory	**LT** : Low Temp
CMB 50					

† NOT AVAILABLE FOR **HM 50** †† AVAILABLE FOR **CMB 50** ONLY ††† AVAILABLE FOR **HM 50** ONLY

[SERIES] [RELAY] [DIMMING] [PHOTOCELL] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : CMB 50 R P LT

LINE VOLTAGE

SERIES #	START-TO-HIGH	DIMMING†	PHOTOCELL††	VOLTAGE	COLOR†††	TEMP/HUMIDITY
HMR 50	**Blank** : None	**Blank** : None	**Blank** : None	**Blank** : 120/277 VAC	**WH** : White	**Blank** : Standard
RMR 50	**SH** : w/ STH	**D** : Occupancy Controlled Dimming	**P** : Photocell	**347** : 347 VAC	**IV** : Ivory	**LT** : Low Temp
CMRB 50						

† NOT AVAILABLE FOR **HMR 50** †† AVAILABLE FOR **CMRB 50** ONLY ††† AVAILABLE FOR **HMR 50** ONLY

[SERIES] [START-TO-HIGH] [DIMMING] [PHOTOCELL] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : CMRB 50 SH P 347 LT

LINE VOLTAGE : 2-POLE

SERIES #	PHOTOCELL†	VOLTAGE	TEMP/HUMIDITY
RMR 50 2P	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
CMRB 50 2P	**P** : Photocell	**347** : 347 VAC	**LT** : Low Temp

† NOT AVAILABLE FOR **RMR 50 2P**

[SERIES] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMRB 50 2P P 347 LT

LINE VOLTAGE : 208/240, 480 VAC

SERIES #	PHOTOCELL†	TEMP/HUMIDITY
RMR 50 208	**Blank** : None	**Blank** : Standard
RMR 50 480	**P** : Photocell	**LT** : Low Temp
CMRB 50 208		
CMRB 50 480		

† NOT AVAILABLE FOR **RMR 50 208/480**

[SERIES] [PHOTOCELL] [TEMP/HUMIDITY]

EXAMPLE : CMRB 50 480 P LT

HIGH BAY END-OF-AISLE SENSORS

SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity*
User Adjustable Time Delays
Push-Button Programmable*
Convenient Test Mode*
100 hr Lamp Burn-in Timer*
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS

SURFACE MOUNT
SIZE 4.96"H x 3.10" W x 1.70" D (12.60 cm x 7.87 cm x 4.32 cm)
WEIGHT 7 oz
MOUNTING Single Gang Switch Box
COLOR White, Ivory

FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

ELECTRICAL SPECS

LOW VOLTAGE
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER PACK
PP20, PP20 SH (Page 60 or 63)
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 J; 86 R

LINE VOLTAGE
MAX LOAD / POLE
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
5 Amps @ 208/240 VAC
5 Amps @ 480 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I, K; 86 L, M

OVERVIEW

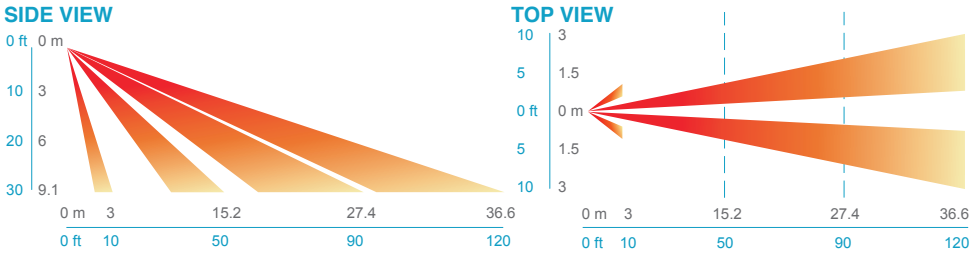
High Bay End-of-Aisle sensors view up to 110 linear ft (33.53 m) of aisleway space when mounted between 30-45 ft (9.14-13.72 m). These sensors are perfect for detecting occupants walking or riding in forklift trucks and typically are used to control an entire aisle of lighting together. For aisles longer than 110 ft (33.53 m), use End-of-Aisle sensors on either end and High Bay Aisleway or 360° sensors to cover the inner portions.

2-Pole High Bay End-of-Aisle sensors are also available, as are units designed for switching lighting. While ideal for on/off control of T5/T8 fluorescent lighting, HID bi-level fixtures can also be controlled when the Start-to-High option is added to line voltage models, or a power pack is used with low voltage models.

COVERAGE PATTERN

HIGH BAY END-OF-AISLE LENS

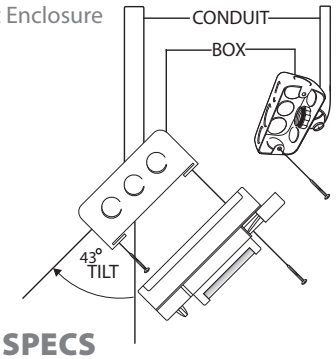
- Detects motion from the end of aisles up to 110 ft (33.53 m) long
- Always apply in pairs facing each other
- Designed to mount 30 ft (9.14 m) high and 10 ft (3.05 m) back from end-of-aisle



MOUNTING CONSIDERATIONS

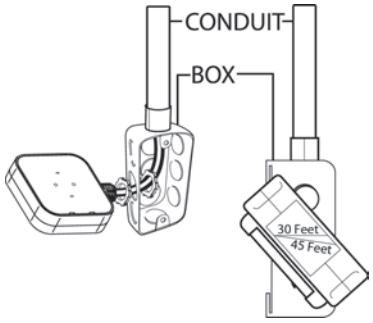
HMR 10

Mounting Detail for Surface Mount Enclosure



HMRB 10

Mounting Detail for Fixture Mount Box Enclosure



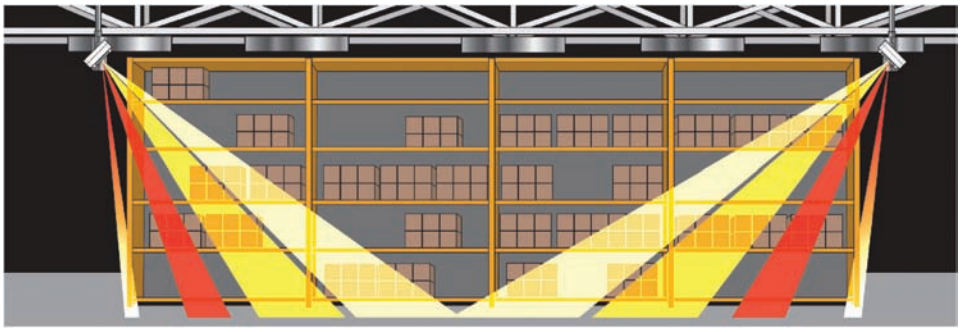
KEY SPECS

SERIES #	ENCLOSURE	DETECTION	POWER TYPE	RELAYS
HM 10	SURFACE MOUNT	PIR	12-24 VDC/VAC	-
HMB 10	FIXTURE MOUNT BOX	PIR	12-24 VDC/VC	-
HMR 10	SURFACE MOUNT	PIR	120/277 VAC	1
HMRB 10	FIXTURE MOUNT BOX	PIR	120/277 VAC	1
HMRB 10 2P**	FIXTURE MOUNT BOX	PIR	120/277 VAC	2
HMRB 10 208	FIXTURE MOUNT BOX	PIR	208/240 VAC	2***
HMRB 10 480	FIXTURE MOUNT BOX	PIR	480 VAC	2***

* Not applicable for HM(R) 50 Series
** LampMaximizer+ features not available
*** Relays switch together

APPLICATION

COVERAGE OF ENTIRE AISLE FROM ENDS



ENVIRONMENTAL SPECS

OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OPTIONS

D OCCUPANCY CONTROLLED DIMMING
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy timeout period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

R LOW VOLTAGE RELAY
- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via an SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

SH START-TO-HIGH
- Upon power up, sensor holds lights on and high for 20 min

347 347 VAC
- Allows sensor to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C

ORDERING BLOCK

LOW VOLTAGE

SERIES #	RELAY	DIMMING†	COLOR††	TEMP/HUMIDITY
HM 10	**Blank** : None	**Blank** : None	**WH** : White	**Blank** : Standard
HMB 10	**R** : Low Voltage Relay	**D** : Occupancy Controlled Dimming	**IV** : Ivory	**LT** : Low Temp

†NOT AVAILABLE FOR **HM 10**

†† AVAILABLE FOR **HM 10** ONLY

[SERIES] [RELAY] [DIMMING] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : HMB 10 R D LT

LINE VOLTAGE

SERIES #	START-TO-HIGH	DIMMING†	VOLTAGE††	COLOR†††	TEMP/HUMIDITY
HMR 10	**Blank** : None	**Blank** : None	**Blank** : 120/277 VAC	**WH** : White	**Blank** : Standard
HMRB 10	**SH** : w/ STH	**D** : Occupancy Controlled Dimming	**347** : 347 VAC	**IV** : Ivory	**LT** : Low Temp
HMRB 10 2P					
HMRB 10 208					
HMRB 10 480					

† AVAILABLE FOR **HMRB 10** ONLY

†† NOT AVAILABLE FOR **HMRB 10 208** OR **HMRB 10 480**

††† AVAILABLE FOR **HMR 10** ONLY

[SERIES] [START-TO-HIGH] [DIMMING] [VOLTAGE] [COLOR] [TEMP/HUMIDITY]

EXAMPLE : HMRB 10 480 LT

HIGH BAY SENSORS W/ ALTERNATING RELAYS

SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity
User Adjustable Time Delays
Self-Contained Relays, No Power Packs Required
Interchangeable Hot & Load Wires, Impossible to Wire Backwards
No Minimum Load
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)

PHYSICAL SPECS

CEILING MOUNT
SIZE 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
WEIGHT 6 oz
MOUNTING 3.5" Octagon Box, or Single Gang Handy Box
COLOR White

RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
WEIGHT 6 oz
MOUNTING Recessed into a 4" x 4" square junction box
COLOR White

FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D (9.22 cm x 9.22 cm x 3.81 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

ELECTRICAL SPECS

MAX LOAD / POLE (1 Phase Only)
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 I

ENVIRONMENTAL SPECS

OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

The Alternating Off **(AO)** relay control scheme for 2-Pole High Bay occupancy sensors provides high/low control of two ballast fluorescent fixtures while ensuring even wear of lamps. With the "**AO**" relay scheme, one lamp turns off and remains off during vacancy periods. However, to assure even lamp wear, the off lamp is alternated each occupancy cycle.

When coupled with the Low Temp **(LT)** option, this scheme is also ideal for cold storage or freezer environments, where it is desired to always keep the lamps warm. The Alternating Off relay control scheme is also provided as a non-default setting in standard (models without **AO** option) 2-Pole High Bay occupancy sensors.

KEY SPECS

SERIES#	ENCLOSURE	DETECTION	RELAY SCHEME	LENSTYPE
CMR 6 2P AO	**CEILING MOUNT**	**PIR**	**AO**	**360º**
RMR 6 2P AO	**RECESSED MOUNT**	**PIR**	**AO**	**360º**
CMRB 6 2P AO	**FIXTURE MOUNT BOX**	**PIR**	**AO**	**360º**
RMR 50 2P AO	**RECESSED MOUNT**	**PIR**	**AO**	**AISLEWAY**
CMRB 50 2P AO	**FIXTURE MOUNT BOX**	**PIR**	**AO**	**AISLEWAY**

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

MODEL #

CMR 6 2P AO
RMR 6 2P AO
CMRB 6 2P AO
RMR 50 2P AO
CMRB 50 2P AO

VOLTAGE

Blank : 120/277 VAC
347 : 347 VAC

TEMP/HUMIDITY

Blank : Standard
LT : Low Temp (-40º F/C)

[SERIES] [VOLTAGE] [TEMP/HUMIDITY] **EXAMPLE : CMR 6 2P AO LT**

SNAP-IN FIXTURE MOUNT BRACKET

SPECIFICATIONS

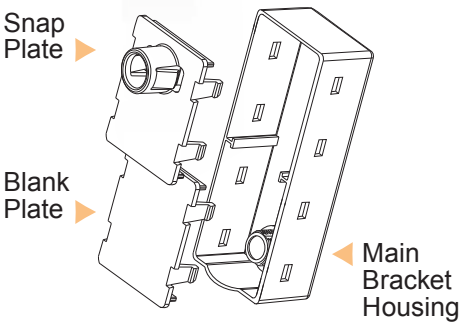
APPLICATIONS
Enables lower mounting of sensors in order to avoid view impediments

FEATURES
3 Sensor Mounting Positions
Simple Snap-in Design
Made in U.S.A.

PHYSICAL SPECS
SIZE (main bracket housing)
5.00" H x 2.00" W x 1.35" D
(12.70 cm H x 5.08 cm W x 3.43 cm D)
WEIGHT 2.52 oz each (excluding nuts)
MOUNTING 1/2" knockout

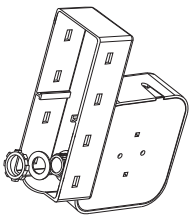
OVERVIEW

When mounting a sensor with the Fixture Mount Box enclosure (**CMB** or **CMRB**), the sensor's field-of-view may be partially blocked by the fixture housing. At high mounting heights, the outer beams are not used; therefore, as long as the sensor is mounted within 1.75 inches from the bottom of the fixture, the sensor's view will not be impaired. The **FB3** Series Snap-in Fixture Bracket provides a convenient method of lowering a fixture mount style sensor such that its view is not impeded by edge of luminaires. Three sensor mounting positions provide flexibility for usage on a wide variety of fixtures.

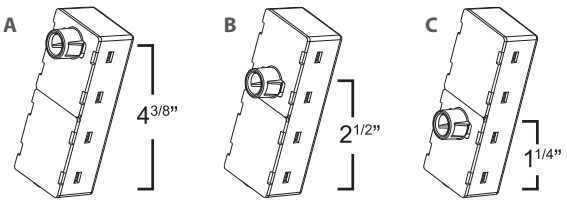


MOUNTING

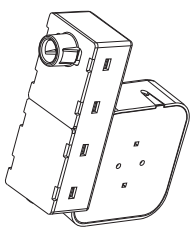
1. Mount sensor to main bracket housing using lock washer and nut.



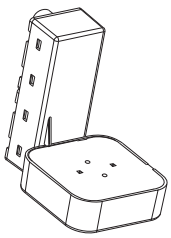
2. Attach the snap plate and blank plate to main bracket housing in one of three configurations (figures A-C) such that bottom of main bracket housing will be flush or lower than bottom edge of fixture once attached.



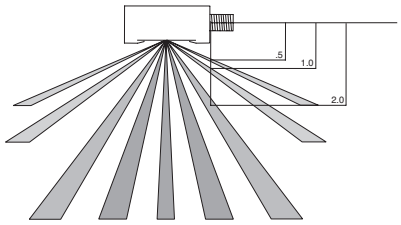
3. Snap entire assembly to fixture via 1/2" knockout.



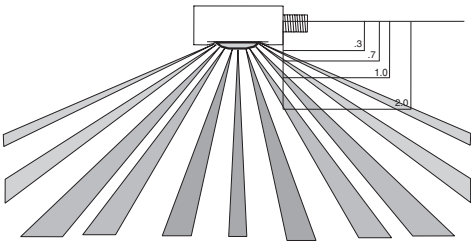
4. Rotate/Align the sensor such that the sensor lens is parallel to floor.



FIXTURE CLEARANCE FOR HIGH BAY 360° LENS



FIXTURE CLEARANCE FOR HIGH BAY AISLEWAY LENS



NOTE: Dimensions shown are in inches

ORDERING BLOCK

MODEL #	DESCRIPTION
FB3	Snap-In Fixture Mount Bracket
FB3 J100	Snap-In Fixture Mount Bracket (100 count box)

SNAP-FIT HIGH BAY 360° SENSOR

SPECIFICATIONS

FEATURES

Convenient Snap-in Mounting
360° Coverage Pattern
Self-Contained Relay -
No Power Pack Required
No Minimum Load
Green LED Indicator
User Adjustable Time Delay
Push-Button Programmable
Interchangeable Line & Load Wires -
Impossible to Wire Backwards
100 hr Lamp Burn-in Timer

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)

PHYSICAL SPECS

SIZE 2.25" H x 1.38" W x 0.82" D
(5.715 cm x 3.51 cm x 2.08 cm)
WEIGHT 4 oz.
MOUNTING Snaps into 2 3/16" H x 1 5/16" W x 1" D cavity in fixture
COLOR White

ELECTRICAL SPECS

MAX LOAD
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
Timers are 1.2x for 50 Hz

ENVIRONMENTAL SPECS

OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

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TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

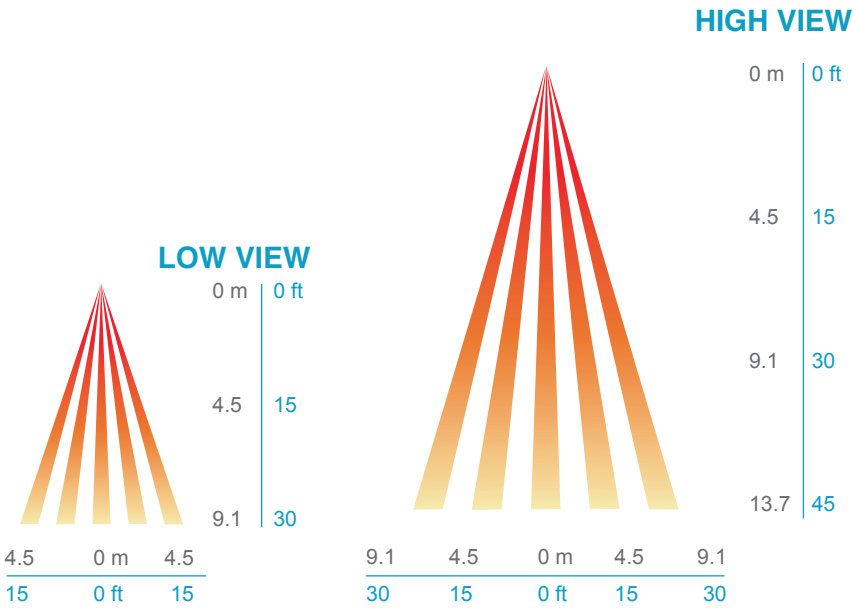
OVERVIEW

The Snap-Fit High Bay sensor **(SFR 5)** is a compact line voltage sensor that snaps directly into a small cavity in a fixture. The sensor utilizes Passive Infrared (PIR) detection to detect motion from occupants within its 360° coverage pattern that overlaps that of most HID, T-5, or T-8 fixtures used in warehouse applications.

COVERAGE PATTERN

MINI HIGH BAY 360° LENS

- Recommended for fixtures that have a 1.0 spacing to mounting height ratio or less (e.g., fixtures 30' on center or less @ a 30' mounting height).
- Recommended for mounting heights between 30 to 45 ft (9.14 to 13.72 m) only
- 15 to 20 ft (4.57 to 7.62 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (**e.g., walking**) up to a 35 ft (10.67 m) mounting height
- Excellent detection of extra large motion (**e.g., forklifts**) up to a 45 ft (13.72 m) mounting height



ORDERING BLOCK

SERIES #

SFR 5

VOLTAGE

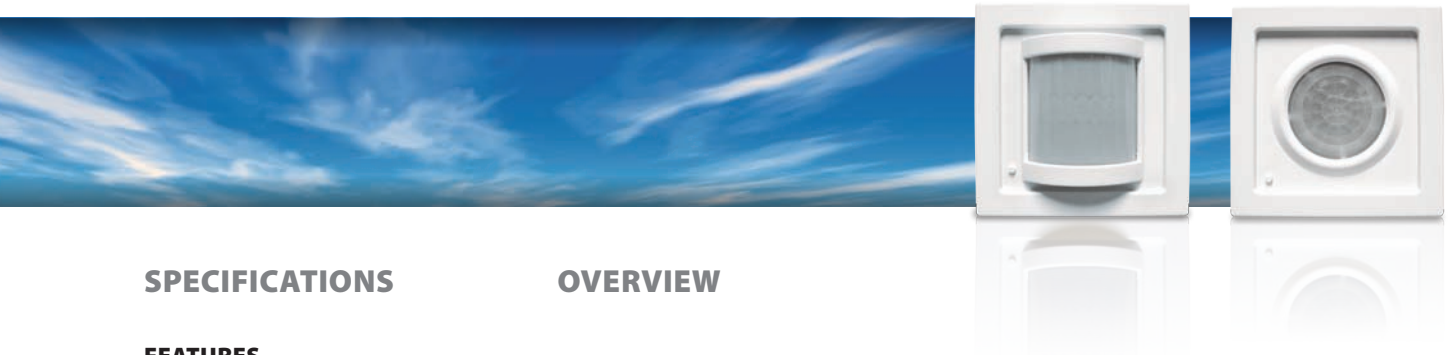
Blank : 120/227 VAC
347 : 347 VAC

TEMP/HUMIDITY

Blank : Standard
LT : Low Temp (-40° F/C)

[SERIES] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : SFR 5 347 LT



SPECIFICATIONS

FEATURES

100% Digital PIR Detection - Excellent RF Immunity
User Adjustable Time Delays
Push-Button Programmable
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

LAMPMAXIMIZER® TECHNOLOGY
- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS

SIZE (W/ MOUNTING FLANGE)
3.40" H x 3.40" W x 1.40" D
(8.64 cm x 8.64 cm x 3.56 cm)
WEIGHT 6 oz
MOUNTING 2.65" square opening in fixture (minimum depth 1.50")
COLOR White

ELECTRICAL SPECS

LOW VOLTAGE
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER PACK
PP20
CURRENT DRAW
Standard, 4 mA
w/ **R** option, 16 mA
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 85 G, J

LINE VOLTAGE
MAX LOAD / POLE
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
5 AMPS @ 208/240 VAC
5 AMPS @ 480 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
WIRING DIAGRAM Page 85 H, I, K; 86 L
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each

ENVIRONMENTAL SPECS

OPERATING TEMP
14º TO 160º F (-10º TO 71º C)
STORAGE TEMP
-14º TO 160º F (-26º TO 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

OVERVIEW

The Small Box **(SB)** Series utilizes an enclosure that can be internally mounted in lighting fixtures. **SB** series sensors accommodate several lens types, can utilize Passive Infrared (PIR) or Dual Technology (PDT) detection, and can be low or line voltage (Single or 2-Pole).

KEY SPECS

SERIES #	LENSTYPE	DETECTION	POWER TYPE	OPTIONS
SB 9	STANDARD RANGE 360°	PIR	12-24 VDC/VAC	R, D, P, ADC, LT
SB PDT 9	STANDARD RANGE 360°	PDT	12-24 VDC/VAC	R, D, P, ADC, LT
SBR 9	STANDARD RANGE 360°	PIR	120/277 VAC	D, P, ADC, 347, LT
SBR PDT 9	STANDARD RANGE 360°	PDT	120/277 VAC	D, P, ADC, 347, LT
SBR 9 2P	STANDARD RANGE 360°	PIR	120/277 VAC / Pole	P, DZ, 347, LT
SBR PDT 9 2P*	STANDARD RANGE 360°	PDT	120/277 VAC / Pole	P, DZ, 347, LT
SB 10	EXTENDED RANGE 360°	PIR	12-24 VDC/VAC	R, D, P, ADC, LT
SB PDT 10	EXTENDED RANGE 360°	PDT	12-24 VDC/VAC	R, D, P, ADC, LT
SBR 10	EXTENDED RANGE 360°	PIR	120/277 VAC	D, P, ADC, 347, LT
SBR PDT 10	EXTENDED RANGE 360°	PDT	120/277 VAC	D, P, ADC, 347, LT
SBR 10 2P*	EXTENDED RANGE 360°	PIR	120/277 VAC / Pole	P, DZ, 347, LT
SBR PDT 10 2P*	EXTENDED RANGE 360°	PDT	120/277 VAC / Pole	P, DZ, 347, LT
SB 6	HIGH BAY 360°	PIR	12-24 VDC/VAC	R, P, D, LT
SBR 6	HIGH BAY 360°	PIR	120/277 VAC	D, P, 347, LT
SBR 6 2P*	HIGH BAY 360°	PIR	120/277 VAC / Pole	P, 347, LT
SBR 6 208	HIGH BAY 360°	PIR	208/240 VAC	P, LT
SBR 6 480	HIGH BAY 360°	PIR	480 VAC	P, LT
SB 50	HIGH BAY AISLEWAY	PIR	12-24 VDC/VAC	R, D, LT
SBR 50	HIGH BAY AISLEWAY	PIR	120/277 VAC	D, 347, LT
SBR 50 2P*	HIGH BAY AISLEWAY	PIR	120/277 VAC / Pole	347, LT
SBR 50 208	HIGH BAY AISLEWAY	PIR	208/240 VAC	LT
SBR 50 480	HIGH BAY AISLEWAY	PIR	480 VAC	LT

* LampMaximizer+ features not available

Note: For detailed option descriptions see page corresponding to Recessed Mount **(RM)** version of each **SB** Series sensor.

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING BLOCK

SERIES #
See Above Key Specs

OPTIONS
See Above Key Specs

[SERIES] [OPTIONS] **EXAMPLE : SB 9 D LT**

REFRIGERATOR AISLE KIT

SPECIFICATIONS

APPLICATIONS
Refrigerator / Freezer Aisles

FEATURES
Complete Kit with Sensor, Power Pack, and 25' Connecting Cable
Multiple Time Delay Settings
30 sec to 4 min (30 sec increments)
5 min to 40 min (5 min increments)
10 sec Test Mode
Push-Button Programmable
Switch Cycle Counter
Total On Timer
Total Installed Timer
Green LED Indicator
End-of-Aisle Masking Kit Included

PHYSICAL SPECS
SENSOR
SIZE see dimensional drawings
WEIGHT 6 oz.
MOUNTING Removeable sensor heads slides onto fixed bracket
COLOR White
POWER PACK
SIZE (½" chase nipple not included)
3.38" H x 2.53" W x 1.83" D
(8.59 cm x 6.43 cm x 4.65 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

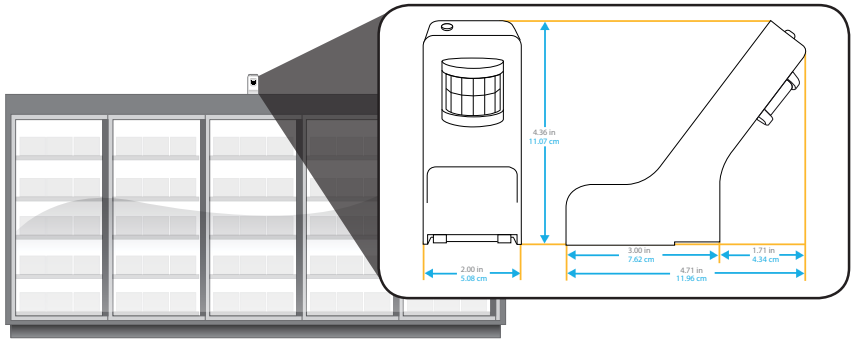
ELECTRICAL SPECS
SENSOR
OPERATING VOLTAGE 15 VDC
CURRENT DRAW 4 mA
WIRE CONNECTION RJ-45 Port (1)
POWER PACK
OPERATING VOLTAGE 120 VAC
RELAY LOAD 20A @ 120 VAC; 1 HP
WIRE CONNECTIONS RJ-45 Ports (2)
WIRING DIAGRAM Page 88 Z

ENVIRONMENTAL SPECS
RELATIVE HUMIDITY
20 to 90% non-condensing
SENSOR
OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
POWER PACK
OPERATING TEMP
-40º to 160º F (-40º to 71º C)
STORAGE TEMP
-40º to 160º F (-40º to 71º C)
SILICONE FREE
ROHS COMPLIANT

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

The Refrigerator Aisle Kit contains everything required for both detecting occupants within an aisle of commercial style refrigerator/freezer cases and controlling the cases' internal LED lighting. The sensor's unique, but unobtrusive, design utilizes a removable mounting plate enabling simple installation, and an RJ-45 connection that makes wiring clean and easy. The sensor utilizes Passive Infrared (PIR) detection to detect motion from occupants within its view pattern. Besides the sensor itself, the kit also includes the necessary power pack and cabling for interconnecting the two devices.



SENSOR OPERATIONS

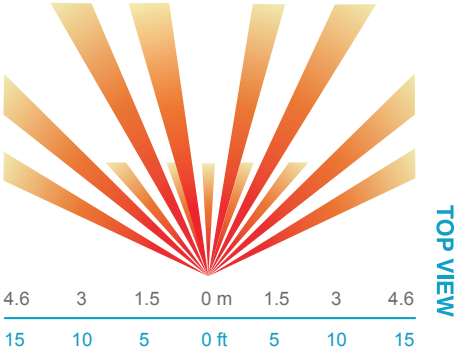
The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a relay located within the power pack is signaled to switch the line voltage lighting load on. The sensor is powered with 15 VDC provided from the power pack. An internal timer, factory set at 30 seconds, keeps the lights on during brief periods of no activity. This timer is push-button programmable, and is reset every time occupancy is re-detected. This state-of-the-art design requires no manual field adjustments. To assist with scheduling relamping, the sensor has a built-in lamp runtime counter and switch counter, both of which can be read out via the unit's LED.

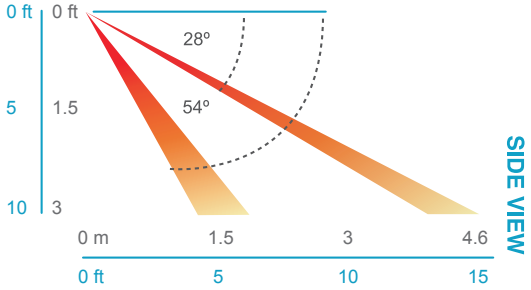
LOW TEMPERATURE OPERATION

The power pack supplied in the kit is conformally coated so as to be corrosion resistant to moisture.

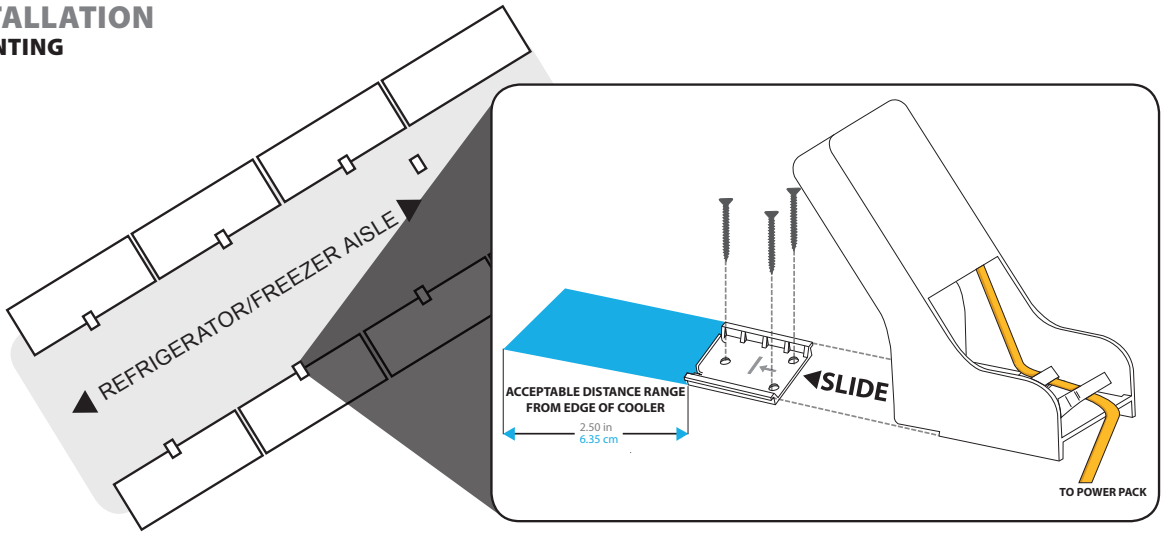
COVERAGE PATTERN

REFRIGERATOR AISLE LENS
• Provides 10-12 ft (3.05-3.66 m) radial coverage when mounted atop a 7 ft (2.13m) refrigerator case





INSTALLATION
MOUNTING



ORDERING BLOCK

MODEL #	DESCRIPTION
RA KIT*	Refrigerator Aisle Kit
RA 15	Refrigerator Aisle Sensor
MP20 RJ	Power Pack w/ RJ-45 Ports
CAB 25	Connector Cable, 25 ft (7.62 m)

* KIT CONTAINS SENSOR, POWER PACK, AND CONNECTOR CABLE

OCCUPANCY SENSOR WIRE GUARDS

SPECIFICATIONS

FEATURES
- 9-Gauge Coated Steel Wire
- Easy Installation and Removal
- LED Indicator on Detector Remains Visible
- Paintable
- CSFM and MEA approved
- UL Listed

PHYSICAL SPECS

CEILING WIRE GUARD
SIZE 7" Dia.
3.25" High

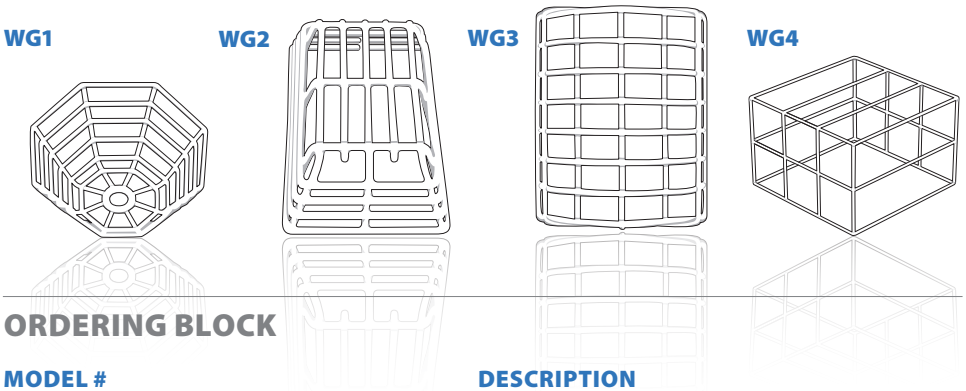
WALL WIRE GUARD
SIZE 4" Wide
6.25" High
2.25" Deep

CORNER WIRE GUARD
SIZE 5.375" Wide
7.75" High
5.625" Deep

BRACKET WIRE GUARD
SIZE 8.00" Wide
8.00" High
8.00" Deep

OVERVIEW

These super tough wire guards are extremely effective in reducing malfunctions and high maintenance costs in areas where abuse is severe. These units are cages constructed of sturdy 9-gauge steel wire coated with heavy duty polyester. These tough, easy-to-install devices help prevent vandalism and accidental damage without significantly effecting the sensor's view pattern or coverage range.



ORDERING BLOCK

MODEL #	DESCRIPTION
WG1	Ceiling Mounted Sensor Wire Guard
WG2	Wall Mounted Sensor Wire Guard
WG3	Corner Mounted Sensor Wire Guard
WG4	Bracket Mounted Sensor Wire Guard

POWER PACKS

POWER PACKS & SLAVE PACKS

SPECIFICATIONS

FEATURES

Powers Low Voltage Sensors*
Self-Contained Relay(s) Switch Line Voltage Loads
Relay Contact Protection*
Plenum Rated

**See Key Spec table for individual unit capabilities*

PHYSICAL SPECS

SIZE (not including chase nipple)
SINGLE POLE UNITS
3.00" H x 2.25" W x 1.88" D
(7.62 cm x 5.72 cm x 4.78 cm)
2-POLE UNITS
4.13" H x 3.00" W x 1.88" D
(10.49 cm x 7.62 cm x 4.78 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR Black

ELECTRICAL SPECS

OPERATING VOLTAGE
120, 240, 277, or 347 VAC
RELAY CURRENT CONSUMPTION
40 mA
SWITCHING LOAD 20 Amps / Pole
OUTPUT VOLTAGE/CURRENT
15 VDC, 150 mA
MOTOR LOAD 1 HP
WIRING DIAGRAMS Page 88 X

ENVIRONMENTAL SPECS

OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

Power packs are the heart of the low voltage sensor system. A power pack may transform Class I high voltage (120/277 VAC or 347 VAC) to Class II 15 VDC for powering remote sensors. A power pack may also switch a lighting load on and off using its internal relay. Class II wire leads connect to 18 AWG or smaller low voltage cable running to the sensors, making installation easy and clean. Power packs also have an elongated mounting nipple that allows it to be mounted either directly through a ½ inch knockout into a junction box, or inside an adjacent box for meeting specific local code requirements in ceiling plenums.

There are several different types of power packs, each with a unique combination of features. The most versatile power pack is the **PP20**, which utilizes patented relay contact protection and can power up to 14 sensors. Multi-circuit control can be handled by multiple **PP20**'s, 2-Pole power packs (**PP20 2P**), or combination power pack and slave packs (**SP20**) configurations.

SLAVE PACK vs POWER SUPPLY

A slave pack (also called an auxiliary relay) contains the same switching relay as a normal power pack, though it does not contain the transformer. Slave packs can be used in applications where power is supplied from another power pack. Slave packs are available with (**SP20** version) and without (**MSP20** version) relay contact protection.

A power supply contains the same transformer as a power pack, though it does not contain a relay. Power supplies are ideal for supplying power to sensors, such as the **CM ADC**, which do not need to switch line voltage.

RELAY CONTACT PROTECTION

An AC semi-conductor is used in parallel with a power relay to perform the actual turning on and off functions. The switching life of this semi-conductor is virtually infinite because it has no moving parts. The power relay contacts are then used to carry the current during the on state, thereby preventing in-rush or inductive kick from damaging the relay contact. The result is extremely long relay life (tested to 400,000 cycles). The **PP20**, **PP20 2P** & **SP20** power pack versions all utilize this technology. When controlling larger loads of electronic ballasts with high in-rush characteristics, relay contact protection is advised.

INTERFACING WITH ELECTRONIC CONTROL SYSTEMS

Power packs with relay contact protection are designed to switch Alternating Current (AC) only. For switching DC signal inputs to EMS or lighting control systems, use power pack model **MP20**, or sensors with the '**R**' option, which adds a signal relay to the low voltage sensor.

KEY SPECS

SERIES #	RELAY CONTACT PROTECTION	TRANSFORMER	RELAYS
PP20	**YES**	**YES**	**1**
PP20 2P	**YES**	**YES**	**2****
SP20	**YES**	**NO**	**1**
MP20	**NO**	**YES**	**1**
MSP20	**NO**	**NO**	**1**
PS150	**NO**	**YES**	**-**

** Relays Switch Together

POWERING CAPACITY

A power pack's transformers can supply up to 150 mA of power. Each relay requires 40 mA during the on state. Low voltage remote sensors typically require 3 mA when detecting occupants, and 0.15 mA when in standby. Therefore, each transformer can handle up to 3 relays (including the relay(s) inside the power pack). For example, one **PP20** can power its relay (40 mA) and 110 mA of external devices. Because of the ultra low current design of the sensors, up to 14 or more sensors can be connected to a single power pack! If multiple power packs are used together, an additional 110 mA is available.

SERIES #	SENSORS	SENSORS W/ R OPTION
[1] PP20 (or MP 20)	14	8
[1] PP20 2P	7	6
[1] PP20 2/SP20 (or MP20 w/ MSP20)	7	6
[1] PP20 2P w/SP20	5	5
[2] PP20 (or 2 MP20)	28	16
[2] PP20 2P	14	12

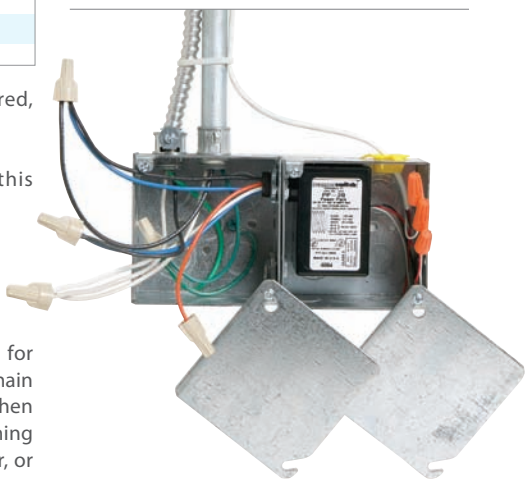
NOTE 1: Only three relays may be controlled with one power pack. If more than three are required, multiple power packs must be used.

NOTE 2: The **R** option adds an isolated low voltage relay to a sensor. Only one sensor with this option is typically needed in a room.

OPTIONS

347 347 VAC
- Allows power pack to be powered by and switch 347 VAC

LT LOW TEMP/HIGH HUMIDITY
- Power pack is corrosion resistant to moisture
- Operates down to -40º F/C



SYSTEM DESIGN CONSIDERATIONS

The local override switch may be upstream or downstream of a **PP20**. However, if an **SP20** or a **PP20 2P** power pack is being used, the switch(es) should be downstream on the load side of the relay. If power is disconnected to the power pack, all subsequent relays will open, turning off all of the loads. If wiring the local switches before the power pack and slave pack, use multiple **PP20**'s, one for each circuit. This will allow for one circuit to remain powered, keeping the system operational when the other is turned off. When controlling a dimming circuit, **PP20** must be wired before the dimmer, or **SP20** may be wired after the dimmer.

MOUNTING IN PLENUMS

Power packs and slave packs are plenum rated. Most local codes allow for small plastic controls in return air plenums, though some do not. To meet all local codes, the units can be mounted inside an adjacent (deep) junction box as shown.

MP20

PP20 2P

SP20

ORDERING BLOCK

SERIES #

PP20
PP20 2P
SP20
MP20
MSP20
PS150

VOLTAGE†

Blank : 120/277 VAC
347 : 347 VAC

TEMP/HUMIDITY

Blank : Standard
LT : Low Temp

† 347 OPTION NOT AVAILABLE ON PP20 2P AND MSP20

[SERIES] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : PP20 347 LT

SPECIALTY POWER PACKS

SPECIFICATIONS

FEATURES
Powers Low Voltage Sensors
Self-Contained Relay(s) Switches
Line Voltage Loads
Relay Contact Protection
Plenum Rated

PHYSICAL SPECS
SIZE (not including chase nipple)
4.13" H x 3.00" W x 1.88" D
(10.49 cm x 7.62 cm x 4.78 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR Black

ELECTRICAL SPECS
OPERATING VOLTAGE
120, 240, or 277 VAC
RELAY CURRENT REQUIREMENTS
40 mA
SWITCHING LOAD 20 Amps / Pole
OUTPUT VOLTAGE/CURRENT
15 VDC, 150 mA
MOTOR LOAD 1 HP
WIRING DIAGRAMS Page 88 Y

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

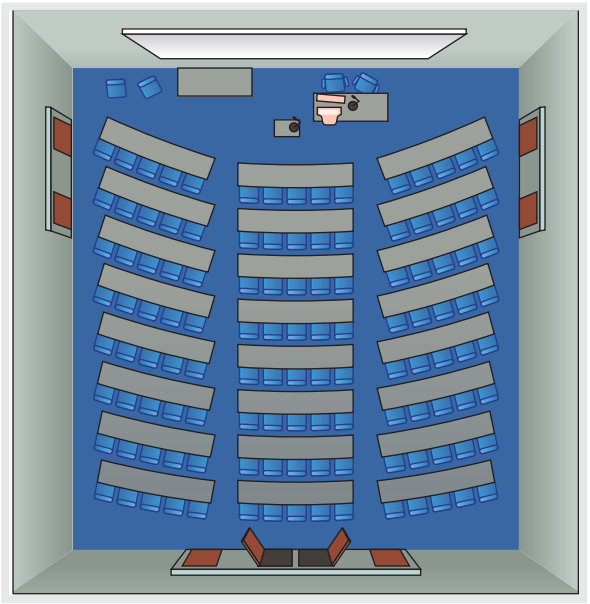
OVERVIEW

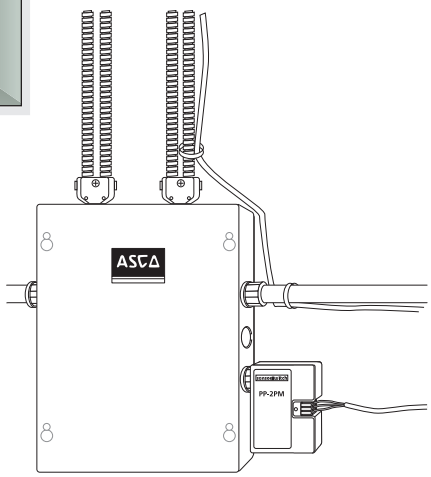
Some lighting systems have special requirements in order to be controlled. This section describes three specialty power packs for use in these unique applications.

CONTROLLING LATCHING LIGHTING CONTACTORS: PP 2PM

The **PP 2PM** momentary power pack directly interfaces with a latching contactor through either line voltage or low voltage. The unit contains two 20 Amp power relays. One relay will close for 3/4 of a second when occupancy is signaled from a connected sensor. The other relay will close for 3/4 of a second once the sensor's time delay has expired.

Typically, these relays are wired to the latching coil of a lighting contactor. Remote momentary switches in the space are also able to turn on/off the lighting, but once the space is vacated, the sensors (via the **PP 2PM**) will turn off the lights. Other control systems that require a pulse input may also be interfaced with the **PP 2PM**.

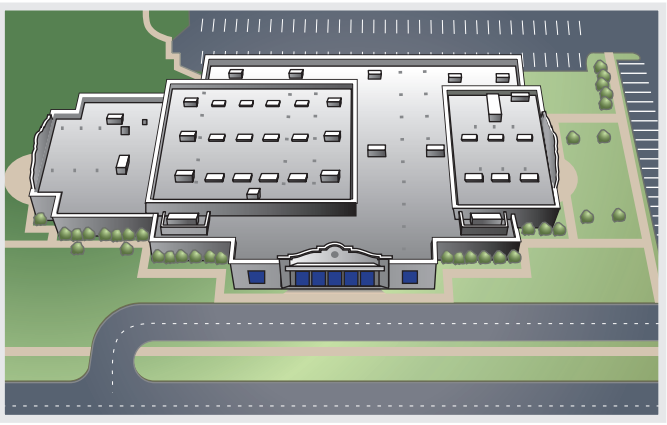




Room w/ Multiple Circuits Controlled via Lighting Contactor

CONTROLLING HID BI-LEVEL LIGHTING: PP20 SH

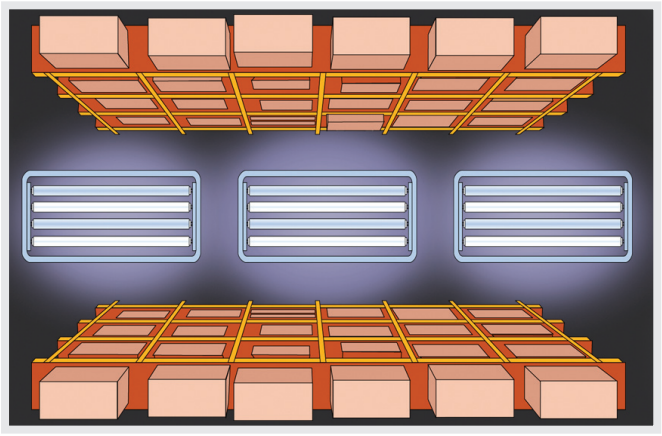
The **PP20 SH** Start-to-High power pack is required for controlling certain types of HID Bi-Level lighting (High/Low) with low voltage sensors. Several common applications for the **PP20 SH** include interfacing with a photocell or occupancy sensor to dim the HID lights during sunny periods or when the area is unoccupied. The **PP20 SH** provides a Start-to-High timer, which brings the lamps to full on for 20 minutes upon initial power up before allowing the lamps to be dimmed to the low setting. The power pack must be on the same power circuit as the fixtures to sense the initial power on condition. Some electronic HID fixtures have this Start-to-High feature built in. In this case, the standard **PP20** or **MP20** power pack may be used.



HID Bi-Level Control in Building with Skylights

CONTROLLING ALTERNATING LIGHTS IN SAME SPACE: PP 2PAR

The **PP 2PAR** alternating power pack alternates between two loads. If a connected low voltage sensor signals occupancy, both of the loads will be turned on. After the sensor time delay expires, the sensor will signal the **PP 2PAR** to turn off one load. Load A is first turned off, while load B remains on. At the next unoccupied period, load B is turned off, while load A stays on. This is to provide relatively even lamp wear when not all of the lights are being extinguished during unoccupied periods. Application examples include corridors, lobbies, or public areas where some light is always desired.



High Bay Corridor w/ Alternating Off Lights

OPTIONS

LT LOW TEMP/HIGH HUMIDITY
- Power Pack is corrosion resistant to moisture
- Operates down to -40º F/C

PP 2PM

PP20 SH

PP 2PAR

ORDERING BLOCK

SERIES #

PP 2PM
PP20 SH
PP 2PAR

TEMP/HUMIDITY

Blank : Standard
LT : Low Temp

[SERIES] [TEMP/HUMIDITY]

EXAMPLE : PP20 SH LT

INDOOR & OUTDOOR

DAYLIGHTING CONTROL SENSORS

INDOOR DAYLIGHTING CONTROL SENSORS
LOW VOLTAGE

SPECIFICATIONS

FEATURES
Works as Stand-Alone Units
or w/ Occupancy Sensors
Self-Calibration for Optimum Set-Point
Push-Button Programmable
100 hr Lamp Burn-in Timer
Fully Digital Control
Green LED Indicator

PHYSICAL SPECS
CEILING MOUNT
SIZE 4.45" Dia. (11.56 cm)
1.55" Deep (3.94 cm)
WEIGHT 6 oz
MOUNTING Ceiling Tile Surface,
3.5" Octagon Box, or
Single Gang Handy Box
COLOR White
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
WEIGHT 6 oz
MOUNTING Recesses into a 4" x 4" square junction box
COLOR White
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D
(9.22 cm x 9.22 cm x 3.81 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

ELECTRICAL SPECS
OPERATING VOLTAGE
12-24 VAC/VDC
RECOMMENDED POWER PACK
PP20 See Page 60
CURRENT DRAW 16 mA
DIMMING LOAD
Sinks up to 20 mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAM Page 87 S, V, W

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

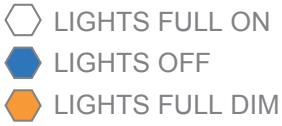
c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

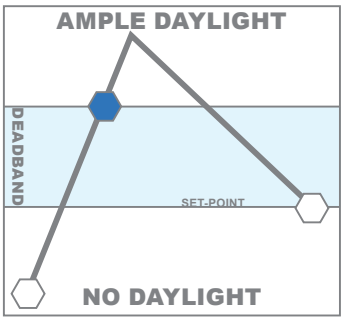
On/Off Photocell and Dimming Photocell sensors provide intelligent control of lighting for daylight harvesting applications. Ideal for spaces with windows, such as vestibules, corridors, classrooms, or offices, the sensors work by monitoring daylight conditions in a room, then controlling the lighting so as to ensure that adequate lighting levels are maintained.

Low voltage sensors are powered with 12-24 VAC/VDC. On/Off Photocell sensors operate with a power pack (model **PP20**), enabling complete 20 Amp circuits to be controlled. Dimming Photocell sensors are capable of controlling any 0-10 VDC dimmable ballast. For line voltage versions, see page 68.

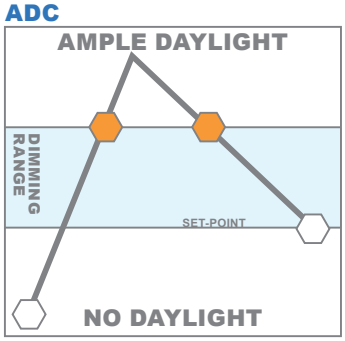
SOLUTION TYPES
- **PC** Automatic On/Off Switching
- **ADC** Automatic Dimming Control
- **PC ADC** Combination On/Off & Dimming Control



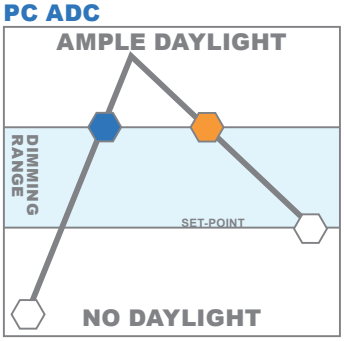
PC



ADC



PC ADC



ADVANCED SENSOR INTELLIGENCE

Possessing advanced intelligence, these sensors greatly improve upon traditional daylight harvesting methods in many aspects:
- An integrated microprocessor in every product removes need for separate control unit
- Operates using a single set-point
- Automatically adapts to changes in room lighting conditions (lamp aging / burn out)

KEY SPECS

SERIES #	ENCLOSURE	CONTROL TYPE	POWER TYPE
CM PC	CEILING MOUNT	ON/OFF	12-24VDC/VAC
RM PC	RECESSED MOUNT	ON/OFF	12-24VDC/VAC
CMB PC	FIXTURE MOUNT BOX	ON/OFF	12-24VDC/VAC
CM ADC	CEILING MOUNT	DIMMING	12-24VDC/VAC
RM ADC	RECESSED MOUNT	DIMMING	12-24VDC/VAC
CMB ADC	FIXTURE MOUNT BOX	DIMMING	12-24VDC/VAC
CM PC ADC	CEILING MOUNT	ON/OFF & DIMMING	12-24VDC/VAC
RM PC ADC	RECESSED MOUNT	ON/OFF & DIMMING	12-24VDC/VAC
CMB PC ADC	FIXTURE MOUNT BOX	ON/OFF & DIMMING	12-24VDC/VAC

USAGE WITH OCCUPANCY SENSORS

Low voltage photocell sensors can work with low voltage occupancy sensors to enable even greater energy savings. Lighting control decisions are made using occupancy as primary factor, daylight level as secondary factor.

LIGHT STATUS

OCCUPANCY DETECTED	SUFFICIENT DAYLIGHT: NO	SUFFICIENT DAYLIGHT: YES
YES	ON	OFF
NO	OFF	OFF

INSTALLERFRIENDLY

These sensors also ease the historically difficult task of calibrating photocell products:

- Automatic set-point programming requires only one installation visit
- Calibration can be done at any time of day
- Integrated foot-candle measurement
- Push-button digital programming; no tools or analog adjustments required

OPTIONS

DZ DUAL ZONE PHOTOCELL

- Provides second output that can control an additional zone of lighting

TWO MODES:

STEPPED DIMMING (DUO) OPERATION (PC only)

- Ideal for A/B (also called inboard/ outboard) switching applications
- Determines the necessary on/off combination of the two poles in order to maintain adequate lighting

PERCENTAGE OFFSET OPERATION

- Ideal for classrooms with individually controlled parallel rows of lights
- **PC** sensors use a relative set-point for the second pole that is a percentage of the first pole's set-point
- **ADC** sensors enable control of an additional 0-10 VDC dimmable ballast at a selected level (voltage) higher than that of the primary zone

LT LOW TEMP/HIGH HUMIDITY

- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C

ORDERING BLOCK

ON/OFF PHOTOCELL

SERIES #	DUAL ZONE	TEMP/HUMIDITY
CM PC	**Blank** : None	**Blank** : Standard
RM PC	**DZ** : Dual Zone	**LT** : Low Temp
CMB PC		

[SERIES] [DUAL ZONE] [TEMP/HUMIDITY]

EXAMPLE : CMB PC DZ LT

DIMMING PHOTOCELL

SERIES #	DUAL ZONE	TEMP/HUMIDITY
CM ADC	**Blank** : None	**Blank** : Standard
RM ADC	**DZ** : Dual Zone	**LT** : Low Temp
CMB ADC		

[SERIES] [DUAL ZONE] [TEMP/HUMIDITY]

EXAMPLE : CMB ADC DZ LT

COMBINATION ON/OFF & DIMMING PHOTOCELL

SERIES #	DUAL ZONE	TEMP/HUMIDITY
CM PC ADC	**Blank** : None	**Blank** : Standard
RM PC ADC	**DZ** : Dual Zone	**LT** : Low Temp
CMB PC ADC		

[SERIES] [DUAL ZONE] [TEMP/HUMIDITY]

EXAMPLE : CMB PC ADC DZ LT

INDOOR DAYLIGHTING CONTROL SENSORS
LINE VOLTAGE

SPECIFICATIONS

FEATURES
Self-Calibrates Optimum Set-Point
Line Powered,
No Power Pack Required
Push-Button Programmable
100 hr Lamp Burn-in Timer
Full Digital Control
Green LED Indicator

PHYSICAL SPECS
CEILING MOUNT
SIZE 4.45" Dia. (11.56 cm)
1.55" Deep (3.94 cm)
WEIGHT 6 oz
MOUNTING 3.5" Octagon Box or
Single Gang Handy Box
COLOR White
RECESSED MOUNT
SIZE 4.40" (11.18 cm) Square
WEIGHT 6 oz
MOUNTING Recesses into a 4" x 4"
square junction box
COLOR White
FIXTURE MOUNT BOX
SIZE 3.63" H x 3.63" W x 1.50" D
(9.22 cm x 9.22 cm x 3.81 cm)
WEIGHT 6 oz
MOUNTING 1/2" knockout
COLOR White

ELECTRICAL SPECS
MAX LOAD / ZONE
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
5 Amps @ 208/240 VAC
5 Amps @ 480 VAC
MOTOR LOAD 1/4 HP
FREQUENCY 50/60 Hz
DIMMING LOAD
Sinks up to 20 mA;
~40 Ballasts @ .5mA each
WIRING DIAGRAMS Page 86 L; 87 T, U

ENVIRONMENTAL SPECS
OPERATING TEMP
14° to 160° F (-10° to 71° C)
STORAGE TEMP
-14° to 160° F (-26° to 71° C)
RELATIVE HUMIDITY
20 to 90% non-condensing
SILICONE FREE
ROHS COMPLIANT

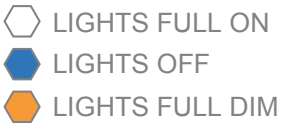
c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

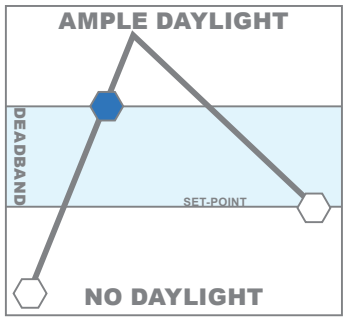
On/Off Photocell and Dimming Photocell sensors provide intelligent control of lighting for daylight harvesting applications. Ideal for public spaces with windows, such as vestibules, corridors, classroom, or offices, the sensors work by monitoring daylight conditions in a room, then controlling the lighting so as to ensure that adequate lighting levels are maintained.

Line voltage sensors are powered by line voltage: therefore, no power packs are needed. On/off Photocell sensors can also directly switch line voltage. Dimming Photocell sensors are capable of controlling any 0-10 VDC dimmable ballast. For low voltage versions, see page 66.

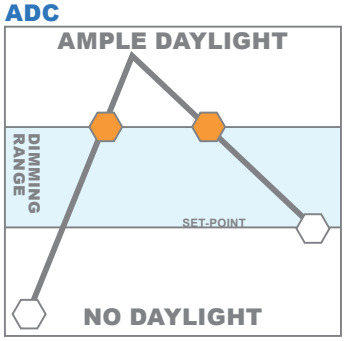
SOLUTION TYPES
- **PC** Automatic On/Off Switching
- **ADC** Automatic Dimming Control
- **PC ADC** Combination On/Off & Dimming Control



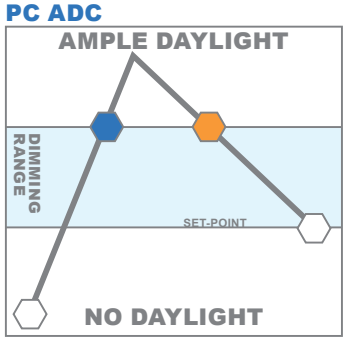
PC



ADC



PC ADC



KEY SPECS

SERIES #	ENCLOSURE	CONTROL TYPE	POWER TYPE
CMR PC	CEILING MOUNT	ON/OFF	120/277 VAC
RMR PC	RECESSED MOUNT	ON/OFF	120/277 VAC
CMRB PC	FIXTURE MOUNT BOX	ON/OFF	120/277 VAC
CMR ADC	CEILING MOUNT	DIMMING	120/277 VAC
RMR ADC	RECESSED MOUNT	DIMMING	120/277 VAC
CMRB ADC	FIXTURE MOUNT BOX	DIMMING	120/277 VAC
CMR PC ADC	CEILING MOUNT	ON/OFF & DIMMING	120/277 VAC
RMR PC ADC	RECESSED MOUNT	ON/OFF & DIMMING	120/277 VAC
CMRB PC ADC	FIXTURE MOUNT BOX	ON/OFF & DIMMING	120/277 VAC

ADVANCED SENSOR INTELLIGENCE

Possessing advanced intelligence, these sensors greatly improve upon traditional daylight harvesting methods in many aspects:

- An integrated microprocessor in every product removes need for separate control unit
- Operates using a single set-point
- Automatically adapts to changes in room lighting conditions (lamp aging / burn out)

INSTALLER FRIENDLY

These sensors also ease the historically difficult task of calibrating photocell products:

- Automatic Set-Point Programming requires only one installation visit
- Calibration can be done at any time of day
- Integrated foot-candle measurement
- Push-button digital programming; no tools or analog adjustments required

OPTIONS

DZ DUAL ZONE [PC ONLY]

- Provides second output that can control an additional zone of lighting

TWO MODES:

STEPPED DIMMING (DUO) OPERATION

- Ideal for A/B (also called inboard/ outboard) switching applications
- Determines the necessary on/off combination of the two poles in order to maintain adequate lighting

PERCENTAGE OFFSET OPERATION

- Ideal for classrooms with individually controlled parallel rows of lights
- Uses a relative set-point for the second pole that is a percentage of the first pole's set-point

208 208 VAC

- Allows sensor to be powered by and switch 208/240 VAC

347 347 VAC

- Allows sensor to be powered by and switch 347 VAC

480 480 VAC

- Allows sensor to be powered by and switch 480 VAC

LT LOW TEMP/HIGH HUMIDITY

- Sensor is corrosion resistant to moisture
- Operates down to -40º F/C

ORDERING BLOCK

ON/OFF PHOTOCELL

SERIES #	DUAL ZONE	VOLTAGE	TEMP/HUMIDITY
CMR PC	**Blank** : None	**Blank** : 120/277 VAC	**Blank** : Standard
RMR PC	**DZ** : Dual Zone	**208** : 208/240 VAC*	**LT** : Low Temp
CMRB PC		**347** : 347 VAC	
		480 : 480 VAC*	

* NOT AVAILABLE WITH **DZ** OPTION

[SERIES] [DUAL ZONE] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR PC DZ 347 LT

DIMMING PHOTOCELL

SERIES #	VOLTAGE	TEMP/HUMIDITY
CMR ADC	**Blank** : 120/277 VAC	**Blank** : Standard
RMR ADC	**347** : 347 VAC	**LT** : Low Temp
CMRB ADC		

[SERIES] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR ADC 347 LT

COMBINATION ON/OFF & DIMMING PHOTOCELL

SERIES #	VOLTAGE	TEMP/HUMIDITY
CMR PC ADC	**Blank** : 120/277 VAC	**Blank** : Standard
RMR PC ADC	**347** : 347 VAC	**LT** : Low Temp
CMRB PC ADC		

[SERIES] [VOLTAGE] [TEMP/HUMIDITY]

EXAMPLE : CMR PC ADC 347 LT

OUTDOOR PHOTOCONTROL SENSORS
ELECTRONIC • LOCKING TYPE

SPECIFICATIONS

APPLICATIONS
- Outdoor Lighting Fixtures for Commercial, Roadway, Area Lighting
- Cities & Downtown Areas
- Retail
- Parking Lots
- Residential or Commercial Properties
- Dawn to Dusk Fixtures

FEATURES
- Energy Efficient at 0.5 Watts
- Electronic Photocontrol Offers Superior Quality and Reliability
- Silicon Light Sensor Decreases Drift Over Time
- Sealed Relays Prevent Contamination
- Durable Polypropylene Cover
- Multi-Volt 120-277, 347 or 480 VAC
- MOV Surge Protection
- Part-Night Option
- Upward Facing Option

PHYSICAL SPECS
SIZE 2.00" H x 3.00" W
(5.08 cm x 7.62 cm)
WEIGHT 6 oz each

ELECTRICAL SPECS
MOV SURGE RATING 160 Joule, 6500 Amp or Multiple Surges
POWER CONSUMPTION 0.5 W
LOAD RATING
1000 Watts, 1800 VAC Ballast
# of OPERATIONS
5000 Operations at Full Load
WIRING DIAGRAM PAGE 89 AC

ENVIRONMENTAL SPECS
OPERATING TEMP -40° to 158° F
(-40° to 70° C) Ambient

OTHER
- ANSI Standard
- UL Listed (except for the TLP 347 M12 which is CSA Listed)
- Assembled in China

OVERVIEW

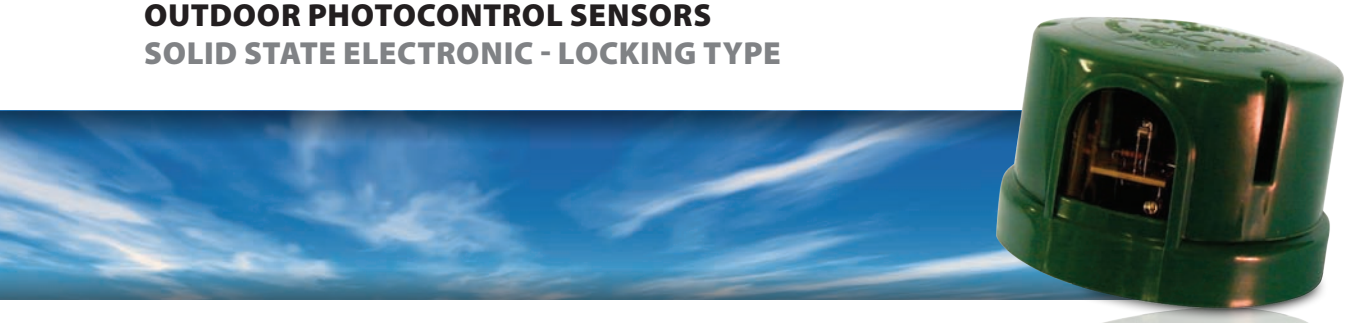
The **TLP** Series is an electronic photocontrol for outdoor commercial, roadway, and area lighting with locking type receptacles. A part-night option is available to turn lights off half-way through the night to save energy and reduce night-time light trespass. For reliable operation in areas with high ambient lighting, an upward facing option is also available.

This control will operate all HID, halogen, incandescent, LED, solid state, fluorescent and relay loads. For optimal performance and reliability use the **TLPS** Series photocontrols for LED and solid state loads. Consult factory for more information.

ORDERING BLOCK

MODEL #	DESCRIPTION
TLP MVOLT M12	Multi-Volt Outdoor Photocontrol, Locking Type, 120-277 VAC, Blue
TLP MVOLT PN M12	Multi-Volt Outdoor Photocontrol, Locking Type, Part-Night Operation, 120-277 VAC, Blue
TLP MVOLT UP M12	Multi-Volt Outdoor Photocontrol, Locking Type, Upward Facing, 120-277 VAC, Blue
TLP 347 M12	347 VAC Outdoor Photocontrol, Locking Type, Green
TLP 480 M12	480 VAC Outdoor Photocontrol, Locking Type, Yellow

OUTDOOR PHOTOCONTROL SENSORS
SOLID STATE ELECTRONIC - LOCKING TYPE



SPECIFICATIONS

FEATURES
- Compatible Luminaire Types include:
  - Luminaires with Electronic Ballasts or Drivers (i.e., Electronic HID, Induction, CFL or LED)
  - Magnetic HID Luminaires < 400 W (Including Pulse-Start Metal Halide)
- Energy Efficient
- Enhanced Ambient Sensing (Standard), Reduced Sensitivity to LED Illumination
- Silicon Light Sensor with Heat Stabilized Polymers
- Sealed Relays for Extreme Environments
- High Frequency Filter Absorbs Electrical Noise
- Integral Fail Off Feature - Eliminates Dayburners
- LED Indicators Provide Status of Voltage & Confirmation of Surge Protection
- 3-6 sec Turn-On & Turn-Off Delay, Prevents False Operation
- Turn-On/Turn-Off Values Remain Stable Over the Life of the Control

PHYSICAL SPECS
SIZE 2.00" H x 3.00" W (5.08 cm x 7.62 cm)
WEIGHT 3.4 oz each

ELECTRICAL SPECS
MOV SURGE RATING Two 320 Joule, 9500 Amp, with Additional In-Series Inductor & High Frequency Filter
POWER CONSUMPTION 0.4 W
LOAD RATING 5 Amp Ballast
TOTAL HOURS OF OPERATION 90,000
WIRING DIAGRAM PAGE 89 AC

ENVIRONMENTAL SPECS
OPERATING TEMP -40° to 221° F (-40°C to 105° C)

OTHER
- ANSI C136.10-1996 Compliant
- ROHS Compliant
- UL Listed
- Assembled in China

OVERVIEW

The **TLPS** Series locking type outdoor photocontrol is specifically designed to address the concerns of solid state/electronic luminaires. The **TLPS** is the ideal choice for outdoor LED fixtures. It has advanced technology to allow operation of both electronic and magnetic platforms and is universally compatible. The additional in-series inductor and high frequency filter protect the ballast/driver from electrical transients such as lighting.

ORDERING BLOCK

MODEL #	DESCRIPTION
TLPS MVOLT M12	Solid State, Multi-Volt Photocontrol, 120-277 VAC, Green

OUTDOOR PHOTOCONTROL SENSORS
LOCKING TYPE ACCESSORIES

SPECIFICATIONS

PHYSICAL SPECS
SIZE 3.10" W x 1.12" H
(7.86 cm x 3.05 cm)
WEIGHT 3.4 oz each

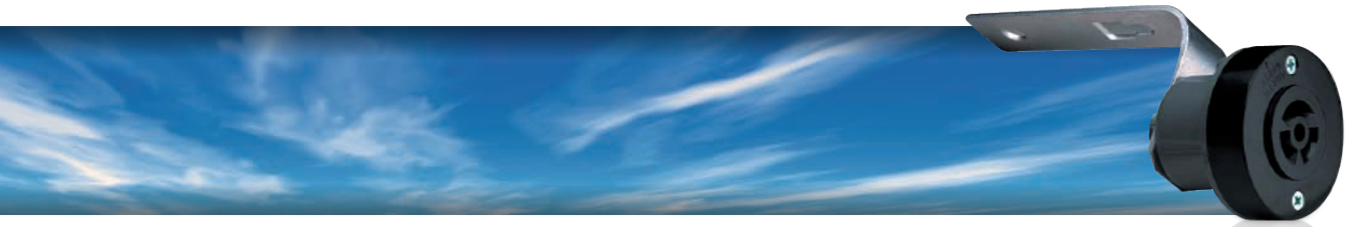
ELECTRICAL SPECS
Shorting Cap has 320 Joule MOV
Surge Protection
WIRING DIAGRAM PAGE 89 AA

ENVIRONMENTAL SPECS
OPERATING TEMP -40° to 158° F
(-40° to 70° C) Ambient

OTHER
Exceeds ANSI C136.10-1996
Assembled in China

OVERVIEW

The **TLPA** Series of accessories offer both Shorting Caps **(SHRT)** and Open Caps **(OPEN)** for Locking Type Photocontrols. Shorting caps are for use with lighting fixtures that are to remain on for continuous periods of time. Open caps are for use with lighting fixtures that are to remain off for continuous periods of time.



SPECIFICATIONS

PHYSICAL SPECS
BRACKET Hot Galvanized Steel or
Aluminum
CUP Rotating Polycarbonate with Locknut

ELECTRICAL SPECS
WIRES 14 AWG, 14" (35.6 cm)
RATING 15 Amp

ENVIRONMENTAL SPECS
OPERATING TEMP 105° C

OTHER
NEMA Standards
Meets ANSI Standards
Assembled in China

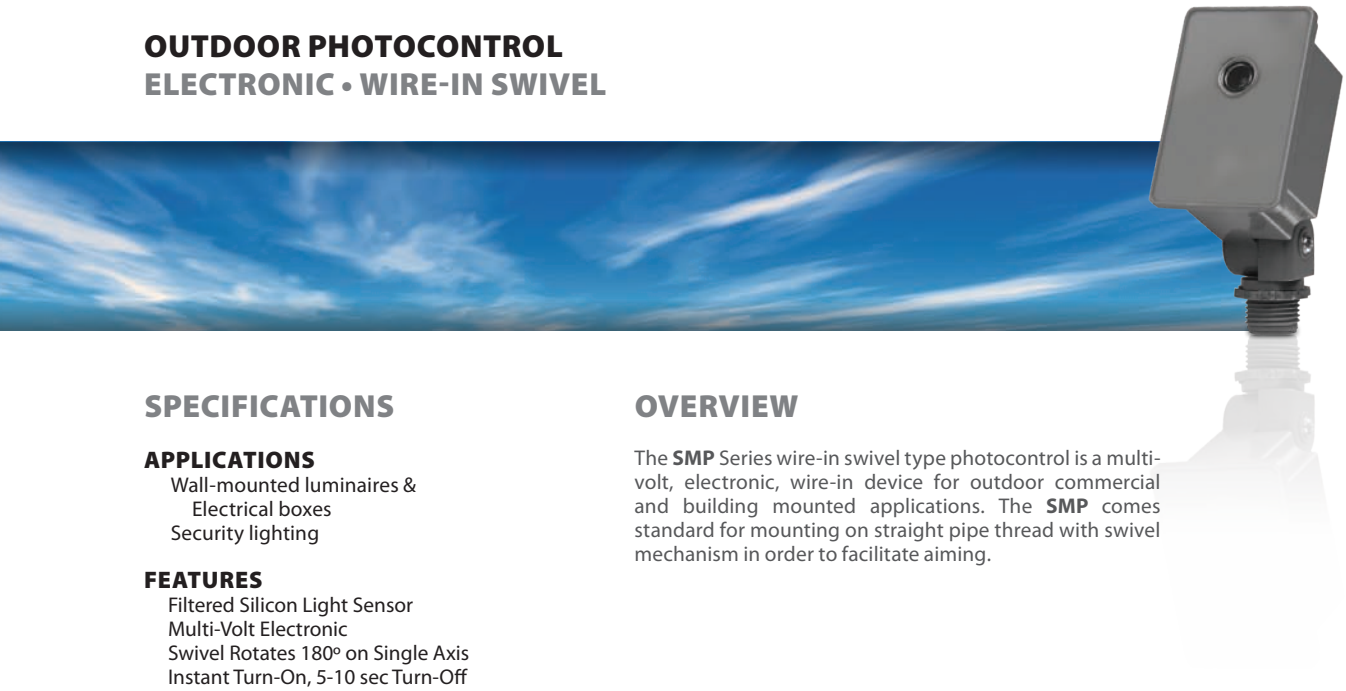
OVERVIEW

The **TLPA RCP M12** is a mounting adapter receptacle for connecting a locking type photocontrol to a fixture. It is used for pole, wall, and frame mounting. The unit comes standard with a bracket, rotating cup, and locknut.

ORDERING BLOCK

MODEL #	DESCRIPTION
TLPA SHRT M12	Shorting Cap Accessory, Locking Type , Black
TLPA OPEN M12	Open Cap Accessory, Red
TLPA RCP M12	Mounting Adapter Accessory, Locking Type Receptacle

OUTDOOR PHOTOCONTROL
ELECTRONIC • WIRE-IN SWIVEL



SPECIFICATIONS

APPLICATIONS
Wall-mounted luminaires & Electrical boxes
Security lighting

FEATURES
Filtered Silicon Light Sensor
Multi-Volt Electronic
Swivel Rotates 180º on Single Axis
Instant Turn-On, 5-10 sec Turn-Off
Straight Pipe Thread Fits Standard 1/2" Knockout or Threaded Connector
Low maintenance

PHYSICAL SPECS
SIZE 2.00" H x 3.00" W (5.08 cm x 7.62 cm)
WEIGHT 3.4 oz. each
WIRES 16 AWG, 200º C (392º F), 12" L

ELECTRICAL SPECS
MOV SURGE RATING 160 Joule, 6500 Amp for Multiple Surges
POWER CONSUMPTION 0.5 W
LOAD RATING 1000 VA Ballast
# of OPERATIONS 5000 Operations at Full Load
WIRING DIAGRAM PAGE 89 AB

ENVIRONMENTAL SPECS
OPERATING TEMP -40º to 158º F (-40º to 70º C) ambient

OTHER
ANSI Standard C136.24
Assembled in China
UL Listed

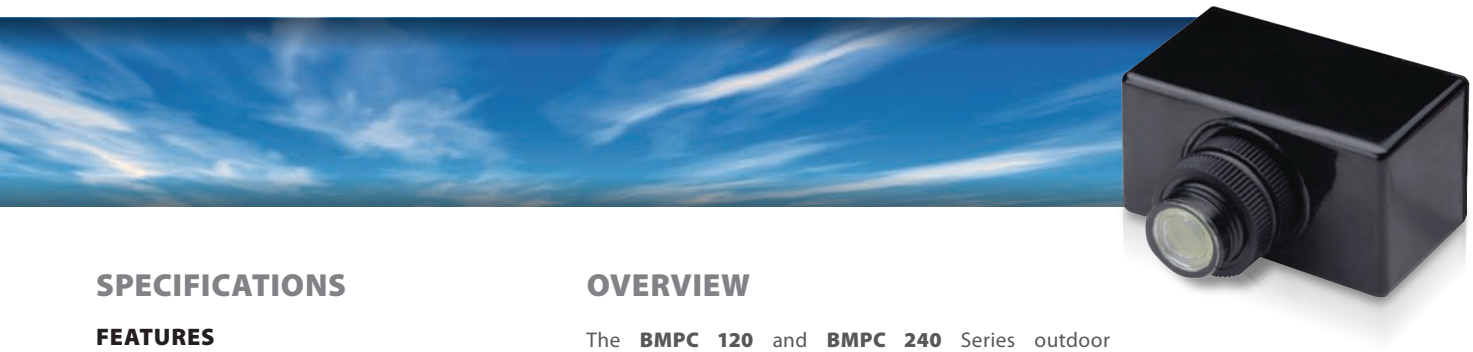
OVERVIEW

The **SMP** Series wire-in swivel type photocontrol is a multi-volt, electronic, wire-in device for outdoor commercial and building mounted applications. The **SMP** comes standard for mounting on straight pipe thread with swivel mechanism in order to facilitate aiming.

ORDERING BLOCK

MODEL #	DESCRIPTION
SMP MVOLT M12	Swivel Type, Multi-Volt Outdoor Photocontrol, 120-277 VAC

OUTDOOR PHOTOCONTROL
NON-ELECTRONIC • WIRE-IN BUTTON



SPECIFICATIONS

FEATURES
Filtered Silicon Light Sensor - Ensures Consistent Turn-On / Off Over Time
Compact Size
Industry Standard Grade Wire-In Button Photocontrol
30-60 sec Delay for On & Off
Polycarbonate Lens and Housing

PHYSICAL SPECS
SIZE .80" H x 2.05 L x 1.30" W (2.03 cm x 5.21 cm x 3.30 cm)
WEIGHT 1.6 oz
LEADS #16, 105° C (221° F), 6" L

ELECTRICAL SPECS
MOV SURGE RATING
190 Joule, 4500 amp MOV
POWER CONSUMPTION 0.5 W
LOAD RATING 1000 VA Ballast
# of OPERATIONS
5000 Operations at Full Load
WIRING DIAGRAM PAGE 89 AD

ENVIRONMENTAL SPECS
OPERATING TEMP -40° to 158° F (-40° to 70° C)

OTHER
ANSI Standard C136.24
UL Listed
Assembled in China

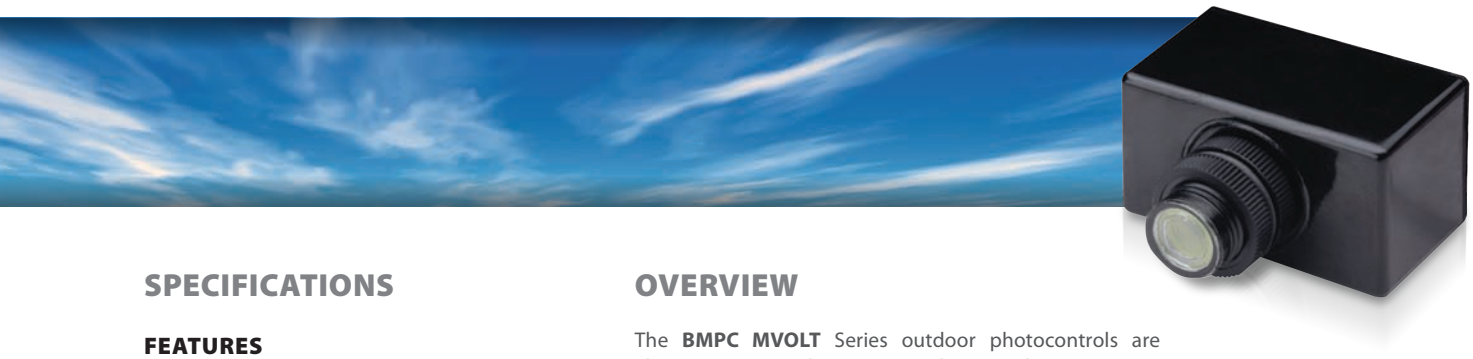
OVERVIEW

The **BMPC 120** and **BMPC 240** Series outdoor photocontrols are wire-in button type devices that are non-electronic. These units are designed to internally mount into lighting fixtures, where compact size and reliability are critical features. For example, outdoor decorative fixtures for commercial, off roadway, or general area lighting of residential or commercial properties are all ideal applications for the **BMPC 120** and **240** Series sensors.

ORDERING BLOCK

MODEL #	DESCRIPTION
BMPC 120 M12	Button Style, 120 VAC, Outdoor Photocontrol, Non-Electronic
BMPC 240 M12	Button Style, 208-277 VAC, Outdoor Photocontrol, Non-Electronic

OUTDOOR PHOTOCONTROL
ELECTRONIC • WIRE-IN BUTTON



SPECIFICATIONS

FEATURES
Filtered Silicon Light Sensor -
Ensures Consistent Turn-On / Off Over Time
Compact Size
Electronic Utility Grade
Instant Turn-On, 5-10 sec Turn Off
Polycarbonate Lens & Housing

PHYSICAL SPECS
SIZE 1.25" H x 2.25" L x 1.30" W
(3.18 cm x 5.72 cm x 3.30 cm)
WEIGHT 3.4 oz each

ELECTRICAL SPECS
MOV SURGE RATING
190 Joule, 4500 Amp for Multiple Surges
POWER CONSUMPTION 0.5 W
LOAD RATING 1000 VA Ballast
# of OPERATIONS
5000 Operations at Full Load
WIRING DIAGRAM PAGE 89 AF

ENVIRONMENTAL SPECS
OPERATING TEMP -40º to 158º F
(-40º to 70º C) Ambient

OTHER
ANSI Standard C136.24
UL Listed
Assembled in China

OVERVIEW

The **BMPC MVOLT** Series outdoor photocontrols are electronic wire-in button type devices. These units are designed to internally mount into lighting fixtures where compact size and reliability are critical features. For example, outdoor decorative fixtures for commercial, off roadway, or general area lighting of residential or commercial properties are all ideal applications for the **BMPC MVOLT** Series sensors.

ORDERING BLOCK

MODEL #	DESCRIPTION
BMPC MVOLT M12	Button Style, Multi-Volt Photocontrol, 120-277 VAC

ADDITIONAL PRODUCTS

SWITCHPOD: SENSOR INTERFACE SWITCH
LOW VOLTAGE

SPECIFICATIONS

FEATURES
- Enables Standard Occupancy Sensors to be used for Manual On Operation
- Alternative Usage as Override Switch for Auto-On Applications
- Single Gang Decorator Style w/ either 1 or 2 On/Off Switches
- Finger-Touch Control
- Self-Grounding Mounting Strap
- Programmable w/o Removing Switch Plate
- Optional 3-Way Operation
- Optional 0-10 VDC Dimming Control

PHYSICAL SPECS
SIZE (not including ground strap)
2.74" H x 1.68" W x 1.63" D
(6.96 cm x 4.27 cm x 4.14 cm)
WEIGHT 2 oz
MOUNTING Single Gang Switch Box or Low Voltage Ring
COLOR White, Ivory, Gray, and Lt. Almond

ELECTRICAL SPECS
OPERATING VOLTAGE
12-24 VAC/VDC
CURRENT 4 mA
DIMMING LOAD
Sinks < 20mA;
~40 Ballasts @ .5mA each
WIRES (all 20 AWG)
sPOD / sPOD 2P: 6
sPOD 3X: 8
sPOD D: 7
sPOD 3X D: 9
RECOMMENDED POWER PACK
PP20
WIRING DIAGRAM PAGE 90 AG, AH, AI

ENVIRONMENTAL SPECS
OPERATING TEMP
14º to 160º F (-10º to 71º C)
STORAGE TEMP
-14º to 160º F (-26º to 71º C)
RELATIVE HUMIDITY
20 to 90% non-condensing

c UL US LISTED
TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

OVERVIEW

The SwitchPod **(sPOD)** Series of low voltage wall stations interface with standard Sensor Switch occupancy sensors and power packs in order to implement a wide range of bi-level switching applications. These switch devices provide an elegant and cost-effective way of deploying bi-level lighting control that meet energy and building codes without having to source special sensors or power packs.

Commonly required by building codes (such as California Title 24), bi-level lighting control is an easy and convenient method of delivering extra energy savings without inconveniencing the occupants. The most common bi-level configuration requires one lighting load to be switched on automatically when occupancy is detected by an occupancy sensor, while a second lighting load can be turned on manually by the occupant if desired. Both loads can then be turned off manually or via the occupancy sensor timing out. Sensors with photocells can also be configured with SwitchPods in order to add override off capabilities.

SwitchPods are all single gang decorator style devices available as single or dual switch units. Versions are also available that work in 3-way applications and/or have a 0-10 VDC dimming output. For digital solutions to bi-level lighting applications, nLight-enabled wall stations (WallPods), power packs, and sensors are necessary.

OPERATION / WIRING INFORMATION

POWER CONNECTION DETAILS
RED - Power (12-24 VAC/VDC)
BLACK - Common

AUTO-ON OPERATION DETAILS
BLUE - Occupancy/Photocell Sensor Input
BLUE w/ WHITE STRIPE - Auto-On Output
note: Output functionality is configurable using button touch sequence

MANUAL ON OPERATION DETAILS
WHITE - Occupancy Sensor Input
WHITE w/ BLU STRIPE - Manual On Output
note: Output functionality is configurable using button touch sequence

3-WAY OPTION (3X OPTION)
YELLOW - Remote Switch I/O
YELLOW w/ BLACK STRIPE - Remote Switch I/O

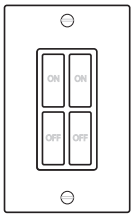
DIMMING OPERATION DETAILS (D OPTION)
VIOLET - 0-10 VDC Output

OPTIONS

3-WAY OPERATION (3X)
- Interfaces w/ other units for 3-way or additional configurations
- Only available on single on/off version

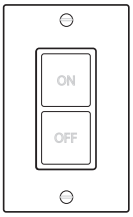
DIMMING (D)
- Enables user control of 0-10 VDC dimmable ballasts

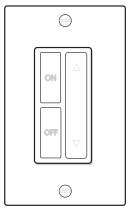
COLOR
- **WH** White
- **IV** Ivory
- **GY** Gray
- **AL** Light Almond
- Wall plate provided
- Must be specified



sPOD 2P:
1) left buttons always control the BLU w/ WHT STRIPE output
2) right buttons always control the WHT w/ BLU STRIPE output

sPOD (3X):
unit controls both BLU w/ WHT STRIPE & WHT w/ BLU STRIPE outputs simultaneously





sPOD (3X) D:
1) on/off buttons control both BLU w/ WHT STRIPE & WHT w/ BLU STRIPE outputs simultaneously
2) dimming output always follows functionality of BLU w/ WHT STRIPE output

ORDERING BLOCK

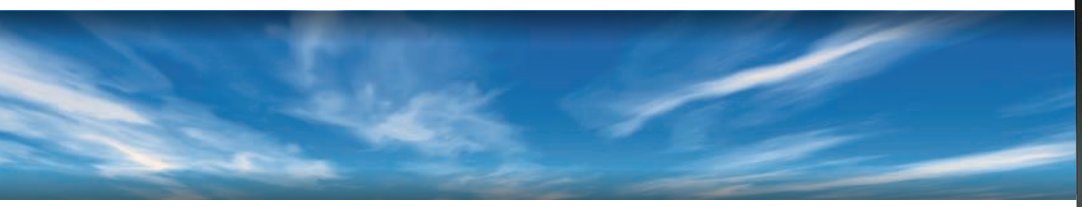
SERIES #	# OF SWITCHES	3-WAY OPERATION*	DIMMING*	COLOR
SPOD	**Blank** : 1 Switch **2P** : 2 Switches	**Blank** : None **3X** : 3-Way Operation	**Blank** : None **D** : Dimming	**WH** : White **IV** : Ivory **GY** : Gray **AL** : Light Almond

*Not available with 2 switch (2P) verision

[SERIES] [# OF SWITCHES] [3-WAY OPERATION] [DIMMING] [COLOR]

EXAMPLE : SPOD 3X D WH

SWITCHPAK
TIME CLOCK RELAY PANEL



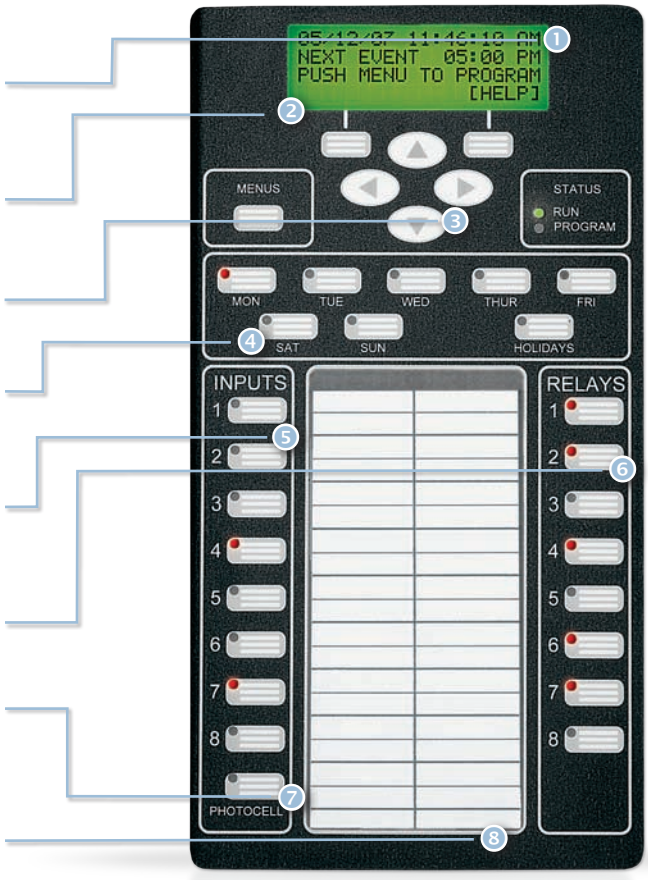
OVERVIEW

The SwitchPak lighting controller is compact and economical, offering simplified solutions to replace traditional time-clock-based contractor panels. This time-based controller switches lighting on/off at preset times while managing a variety of low-voltage inputs. Set-up is quick and easy. Blending simplicity with flexibility, the SwitchPak controller saves time, money, and energy.

- NEMA 1 Rated Locking Enclosure
- Capacity for Eight Single-Pole, 20A Relays
- Dual-Pole, 30A Relays also Available
- Zero-Cross Switching Technology
- Line / Low-Voltage Barrier
- UL and CUL Listed

FEATURES

1. Astronomic clock and calendar with selectable daylight savings time adjustment
2. Easy-to-read, 4-line, 80-character illuminated display with auto-prompting ReadyHelp on-screen guide
3. Easy-to-use menu navigation keys
4. Quick-assign schedule keys with status LED - one touch links the selected schedule to days of the week or holidays
5. Quick-assign input keys with status LED - one touch links the selected switch, occupancy sensor, or contact closure to one or more relays; press to override assigned group
6. Quick-assign relay keys with status LED - one touch links the relay to selected schedule, switch, or photocell; press to override relay
7. Photocell set-up does't require adjustments at sensor - instant override of photocell for testing
8. Blank slip-in card for convenient identification of inputs and relays



ORDERING BLOCK

MODEL #	DESCRIPTION
SPAK 8S 120/277	Time Clock Panel with 8 Single-Pole Relays
SPAK 4S2D 120/277	Time Clock Panel with 4 Single-Pole Relay & 2 Dual-Pole Relays

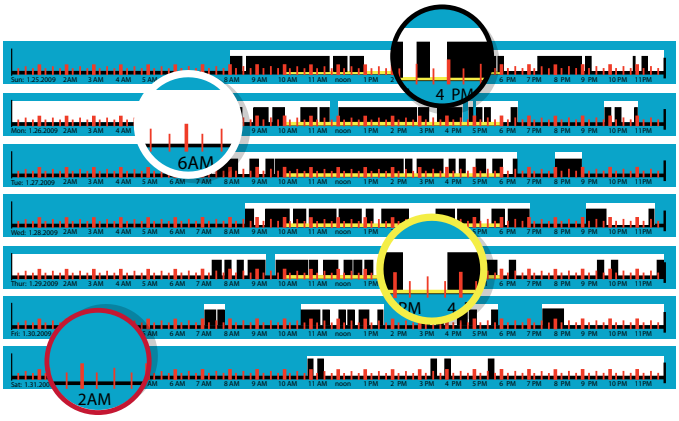
DATA LOGGER MONITORING SYSTEM

THE DATA LOGGER MONITORING SYSTEM

The Data Logger Monitoring System models facility lighting and occupancy patterns. Primarily used to quantify potential energy savings from occupancy sensor projects, this powerful tool is essential for performance contractors, lighting retrofitters, and facility managers when calculating Return on Investment (ROI) and payback estimates.

SYSTEM HIGHLIGHTS

- Data Logger units record activity of a building's lighting, as well as its occupants
- Data Logger software analyzes information and generates customized reports
- Data is presented in **"Lights On vs. Occupancy"** timeline
- Customized reports quantify potential energy savings from occupancy sensor projects
- Use of system is provided to qualified customers at no charge

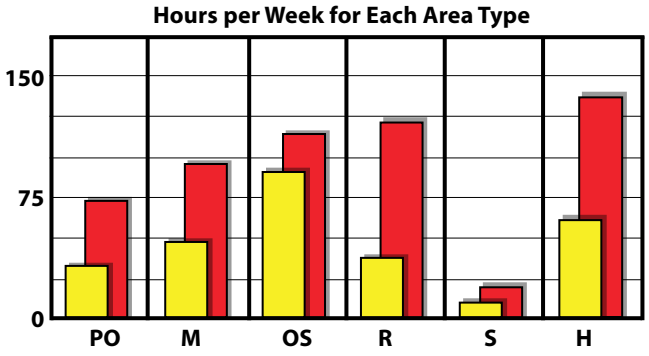


- Red lines represent time intervals
- Yellow lines represent peak billing hours
- White bars represent when the lights are on
- Black bars represent occupancy in the room

DEVICE FEATURES

While light monitors have been around for years, the Sensor Switch Data Logger surpasses all predecessors with several new easy-to-use features that assure more useful results.

- Combination occupancy sensor & light monitoring device
- Distinguishes between natural and artificial light sources
- Multiple loggers can be used together to monitor large spaces
- Installs in seconds; push-button operation
- Data points are recorded every two minutes



ENERGY SAVINGS ANALYSIS

The Data Logger's information is downloaded into sophisticated software that analyzes the data and generates customized reports.

- Each Data Logger is assigned an **Area Type**
- Software averages information from Data Loggers of similar Area Types
- **"Lights On vs. Occupancy"** activity per area presented in 24 hour timelines
- Total energy usage calculated from user-entered lighting loads
- User-adjustable "virtual" occupancy sensor time delay settings
- Analysis of "**Savings vs. Time Delay Setting"** on sensors

CUSTOMIZED REPORTS

- Savings calculated using up to **4 Time-of-Day Billing Rates**
- Total potential savings summaries presented in easy-to-read charts & graphs

Area Type Averages				Normalized Weekly Lights On					Normalized Weekly Occupied					
Area Type		Qty	Watts	Peak	Off	Shldr1	Shldr2	Total	Peak	Off	Shldr1	Shldr2	Total	% sav
Private Office	PO	2	320	26.88	20.87	0.00	0.00	47.76	22.76	3.61	0.00	0.00	26.37	44.79%
Meeting Room	M	3	1387	33.75	59.12	0.00	0.00	92.88	21.95	22.14	0.00	0.00	44.09	52.53%
Open Space	OS	2	10600	39.99	70.45	0.00	0.00	110.44	39.96	45.12	0.00	0.00	85.08	22.96%
Restroom	R	3	213	30.62	87.56	0.00	0.00	118.18	20.90	17.65	0.00	0.00	38.55	67.38%
Storage	S	2	240	5.33	15.52	0.00	0.00	20.85	0.78	7.27	0.00	0.00	8.04	61.44%
Hallway	H	2	880	39.62	98.08	0.00	0.00	137.70	26.32	27.66	0.00	0.00	53.98	60.80%
Building Average			28880	37.99	68.87		0.00	106.86	35.08	38.59		0.00	73.67	31.06%

SETTING NEW STANDARDS IN MONITORING

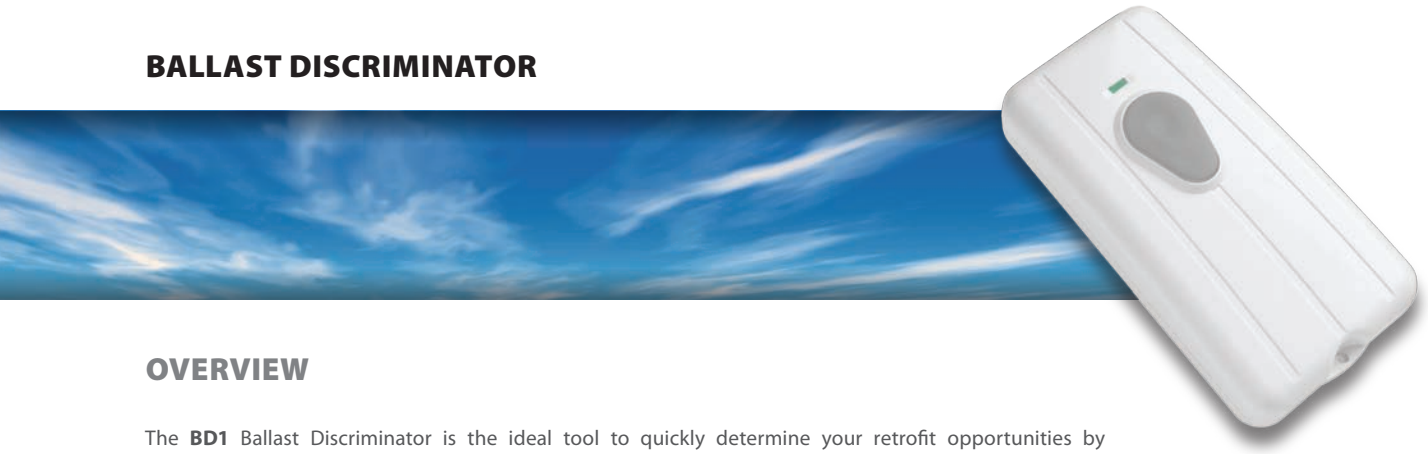
Much like our occupancy sensors, Sensor Switch's Data Logger Monitoring System utilizes innovative technology, surpassing all similar systems available. Its features are both unique and necessary to perform thorough ROI and payback analysis. Data Loggers units can be leased on a per project basis at no charge, or purchased by qualified customers. Subscription access to the Data Logger Software Analysis Suite is also available to customers in good standing and at no charge. To request or purchase Data Loggers, contact your local Sensor Switch (Acuity Brands) sales representative or email:

datalogger@sensorswitch.com

ORDERING BLOCK

MODEL #	DESCRIPTION
LQDM 6 KIT	Kit containing: 45 Data Logger Devices, 1 Hard Sided Carrying Case, 3M Double Sided Tape Strips, Field Monitoring Forms

BALLAST DISCRIMINATOR



OVERVIEW

The **BD1** Ballast Discriminator is the ideal tool to quickly determine your retrofit opportunities by distinguishing between magnetic and electronic ballasts. Simply point the discriminator at the light fixture, then press and hold the button until the LED lights. If the LED lights green, the ballast is electronic; if the LED lights orange, the ballast is magnetic. A must for every lighting retrofitter.

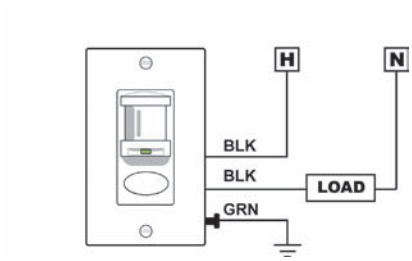
ORDERING BLOCK

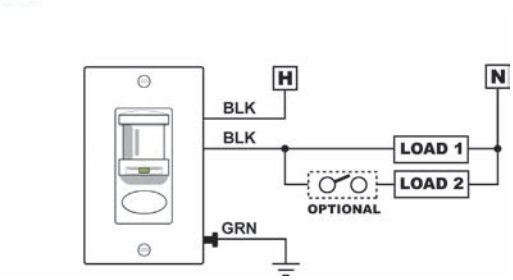
MODEL #	DESCRIPTION
BD1	Ballast Discriminator - Handheld Tool

WIRING DIAGRAMS

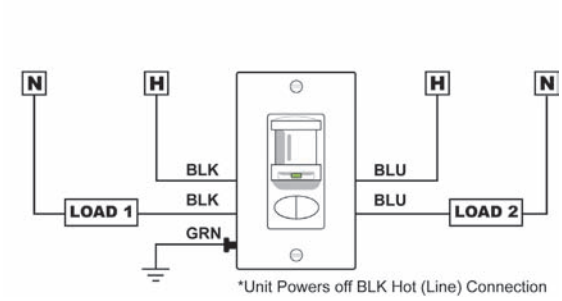
WIRING DIAGRAMS
DO NOT WIRE HOT

A WALL SWITCHES: SINGLE POLE

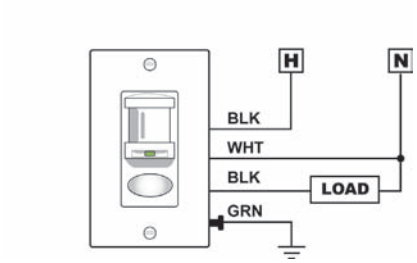




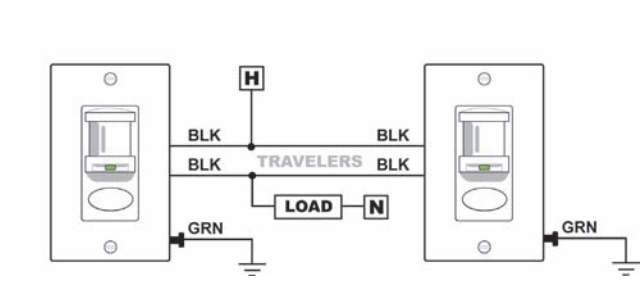
B WALL SWITCHES: 2-POLE

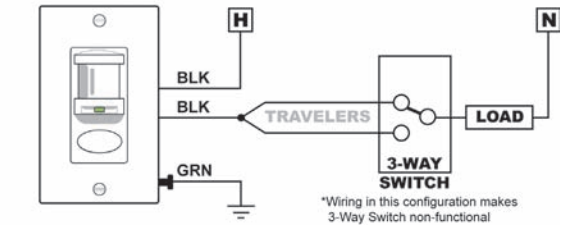


C WALL SWITCHES: NIGHTLITE

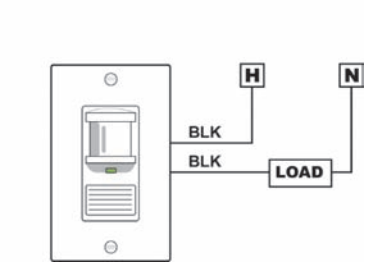


D WIRING 2 SENSORS IN 3-WAY CONFIGURATION

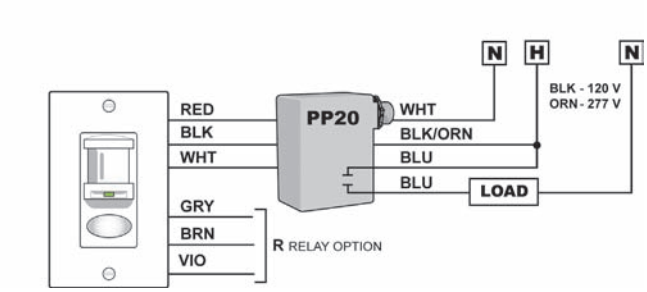




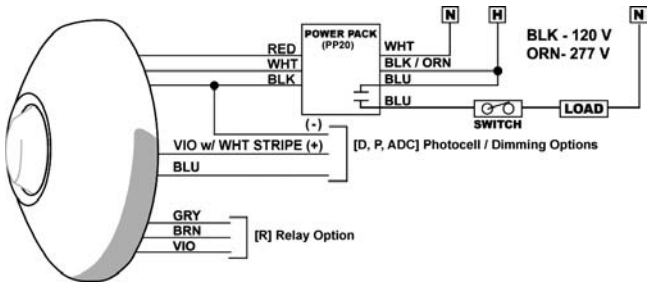
E INTERNALLY POWERED WALL SWITCHES



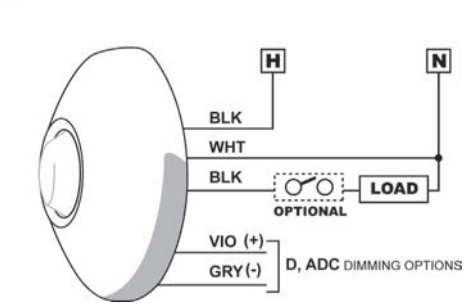
F WALL SWITCHES: LOW VOLTAGE



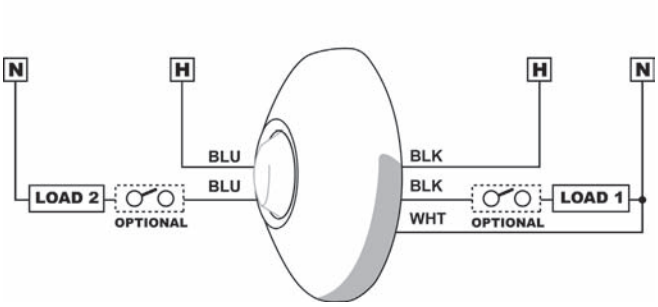
G LOW VOLTAGE STANDARD & EXTENDED RANGE SENSORS



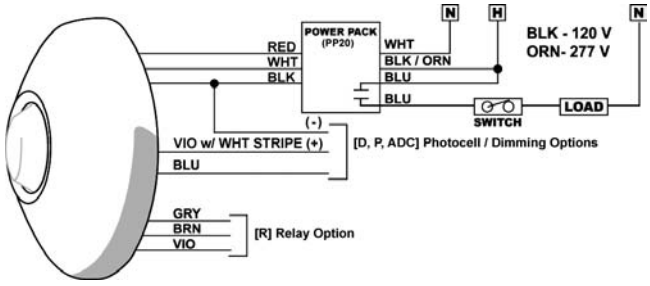
H LINE VOLTAGE STANDARD & EXTENDED RANGE SENSORS



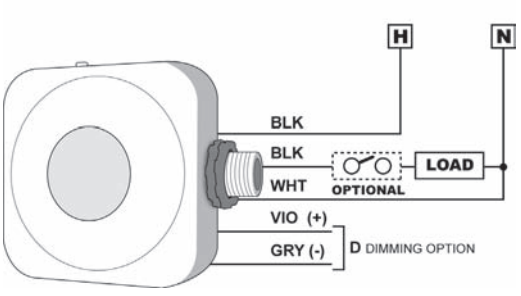
I LINE VOLTAGE 2-POLE STANDARD RANGE, EXTENDED RANGE, & HIGH BAY SENSORS



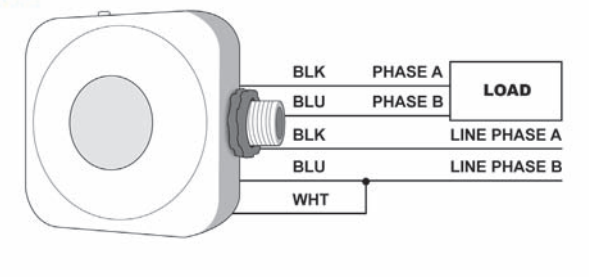
J LOW VOLTAGE HIGH BAY CEILING, RECESSED, & FIXTURE MOUNT SENSORS



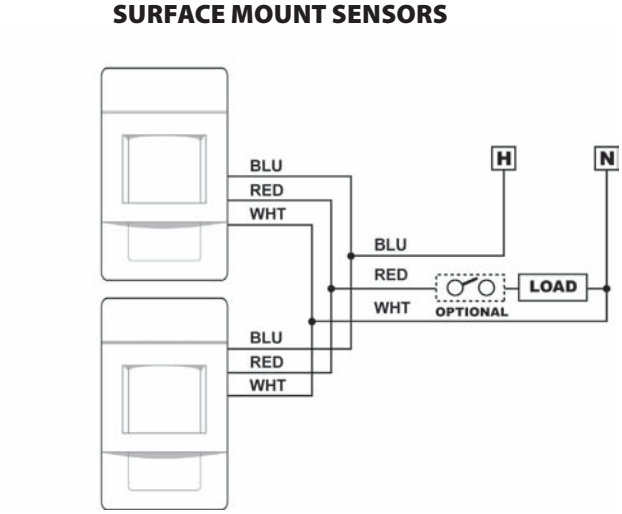
K LINE VOLTAGE HIGH BAY CEILING, RECESSED & FIXTURE MOUNT SENSORS



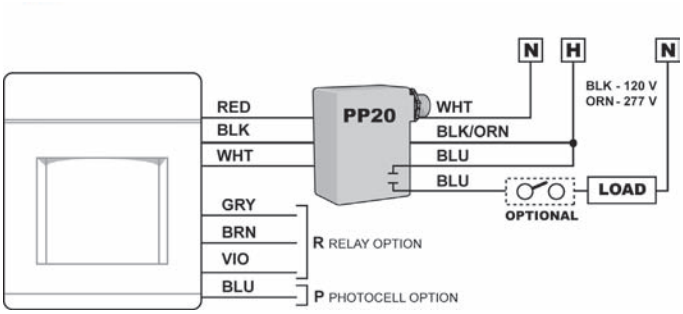
L LINE VOLTAGE 208/240, or 480 VAC HIGH BAY SENSORS



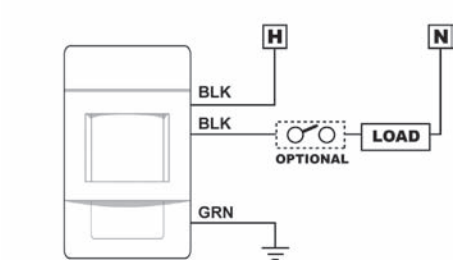
M LINE VOLTAGE HIGH BAY SURFACE MOUNT SENSORS



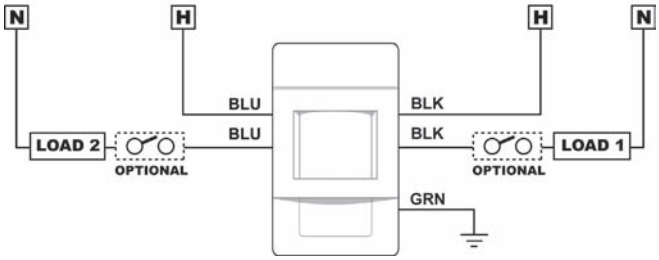
N LOW VOLTAGE WIDE VIEW & HALLWAY SENSORS



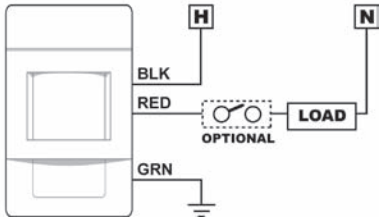
O LINE VOLTAGE WIDE VIEW SENSORS: SINGLE POLE



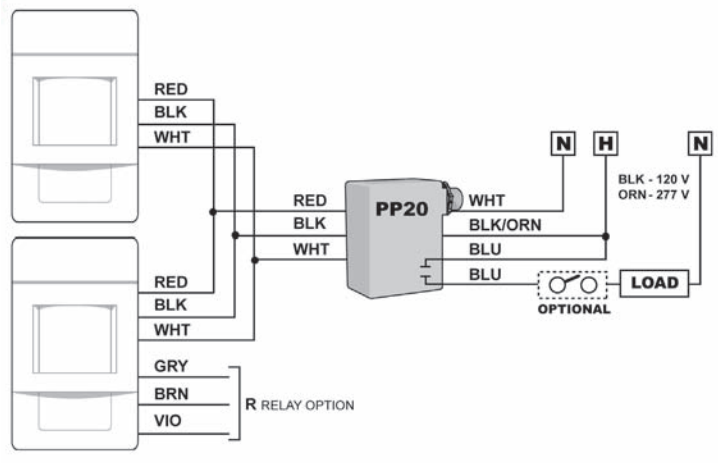
P LINE VOLTAGE WIDE VIEW SENSORS: 2-POLE



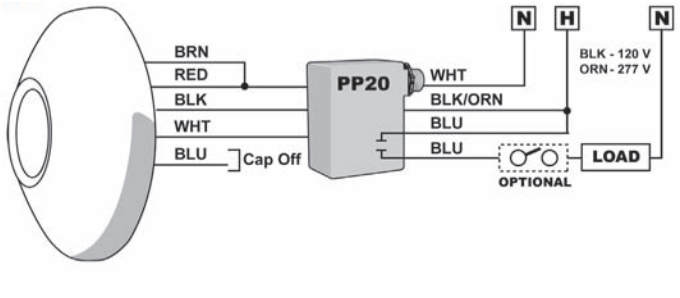
Q LINE VOLTAGE HALLWAY SENSORS

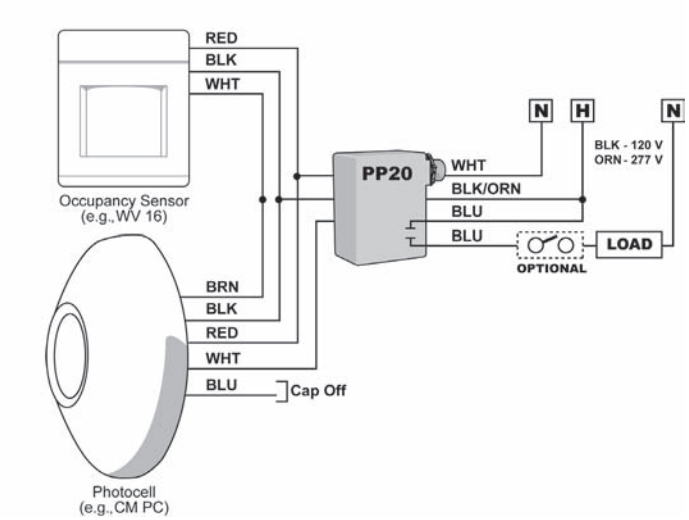


R LOW VOLTAGE HIGH BAY SURFACE MOUNT SENSORS

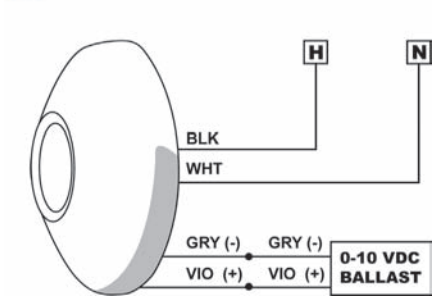


S LOW VOLTAGE ON/OFF PHOTOCELL

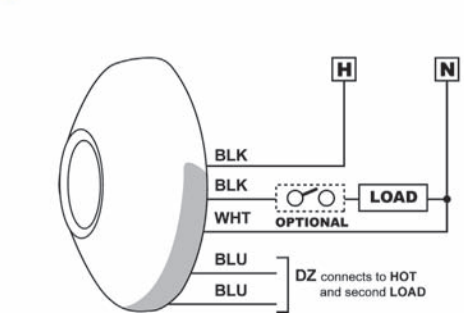




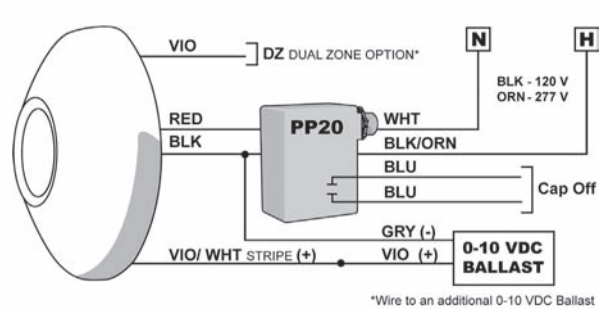
T LINE VOLTAGE ON/OFF PHOTOCELL



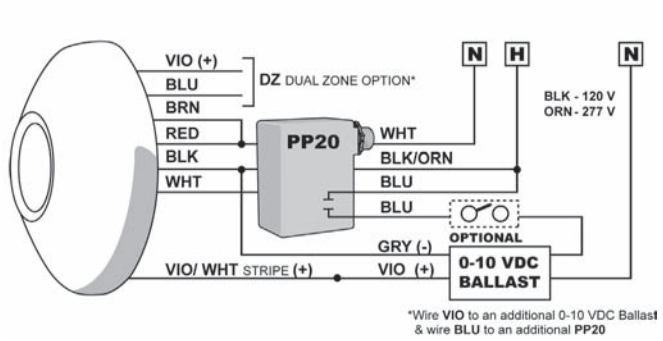
U LINE VOLTAGE AUTO DIMMING PHOTOCELL

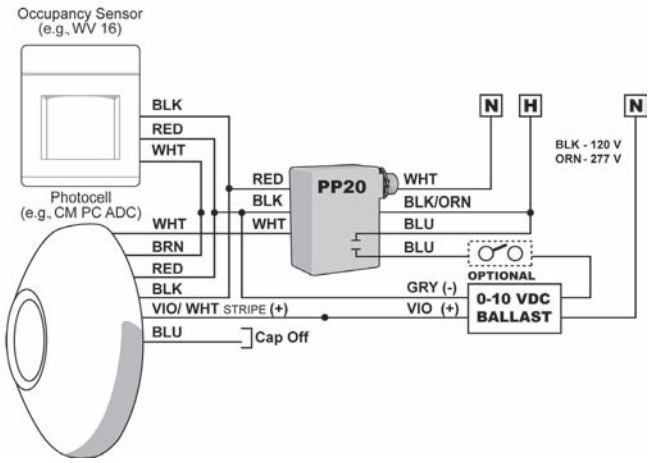


V LOW VOLTAGE AUTOMATIC DIMMING PHOTOCELL



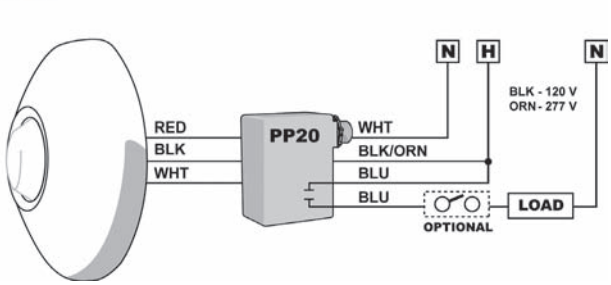
W LOW VOLTAGE ON/OFF & AUTOMATIC DIMMING PHOTOCELL



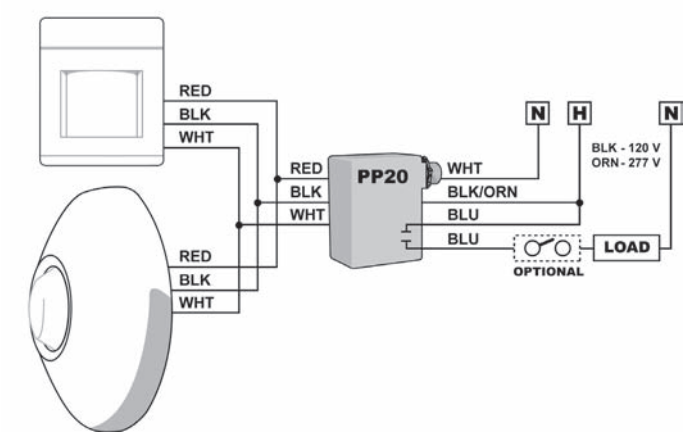


X POWER PACKS & SLAVE PACKS

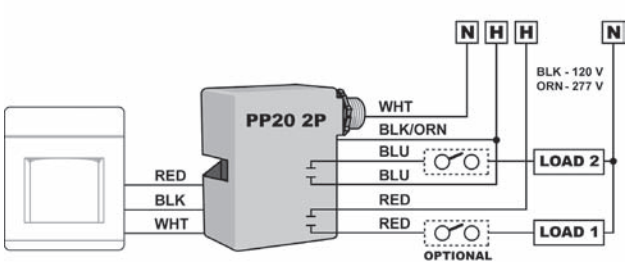
ONE SENSOR CONTROLLING ONE CIRCUIT



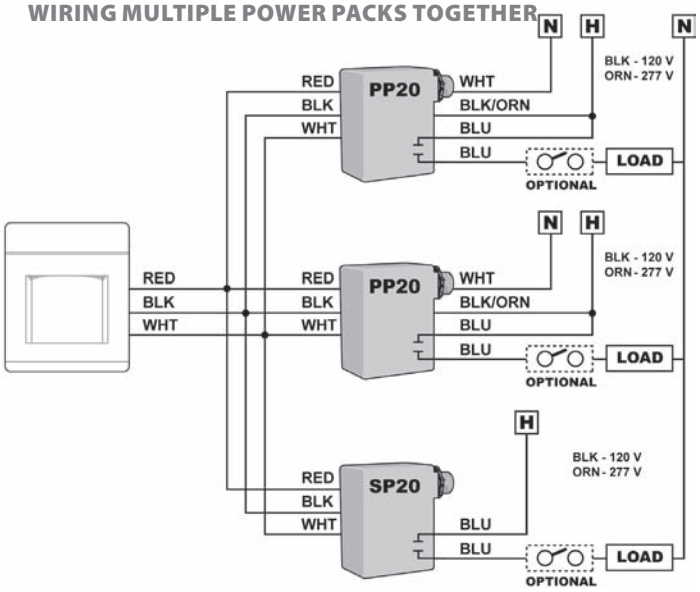
MULTIPLE SENSORS CONTROLLING ONE CIRCUIT



ONE SENSOR CONTROLLING TWO CIRCUITS

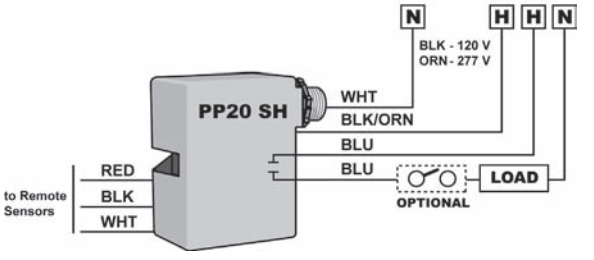


WIRING MULTIPLE POWER PACKS TOGETHER

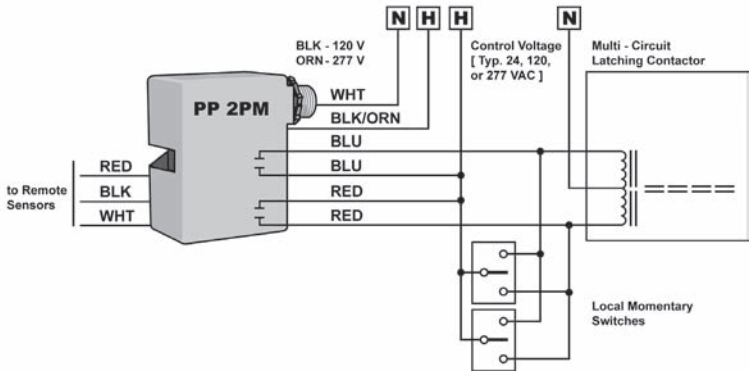


Y SPECIALTY POWER PACKS

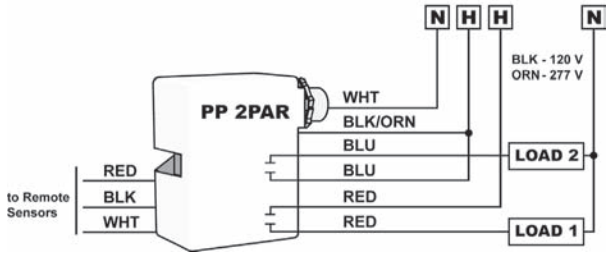
START-TO-HIGH POWER PACK WIRING (PP20SH)



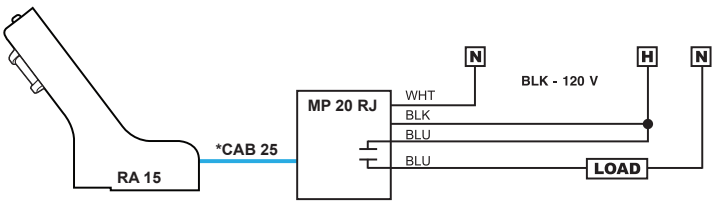
MOMENTARY POWER PACK WIRING (PP 2PM)



ALTERNATING OFF RELAY POWER PACK WIRING (PP2PAR)

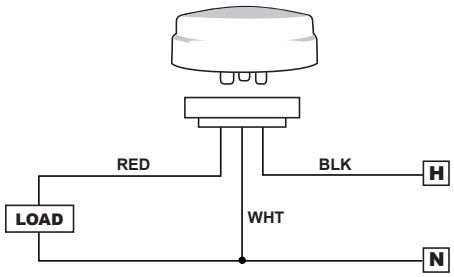


Z REFRIGERATOR AISLEWAY SENSOR KIT



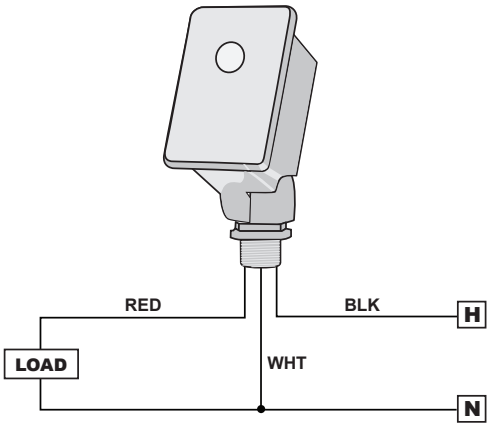
*May be substituted with any 4-conductor patch cable with RJ-11 or RJ-45 connectors

AA OUTDOOR PHOTOCONTROL
ACCESSORIES

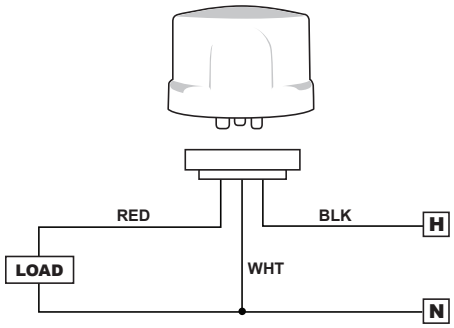


* Note: Photocontrol base is part of luminaire

AB OUTDOOR PHOTOCONTROL
ELECTRONIC: WIRE-IN SWIVEL

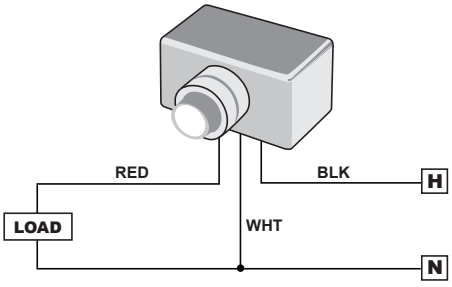


AC OUTDOOR PHOTOCONTROL
ELECTRONIC: LOCKING TYPE

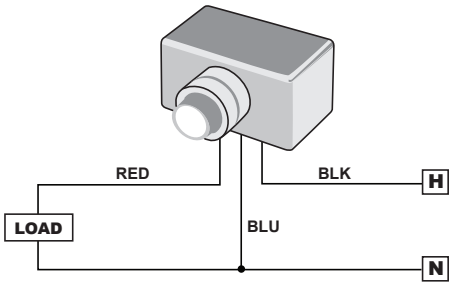


* Note: Photocontrol base is part of luminaire

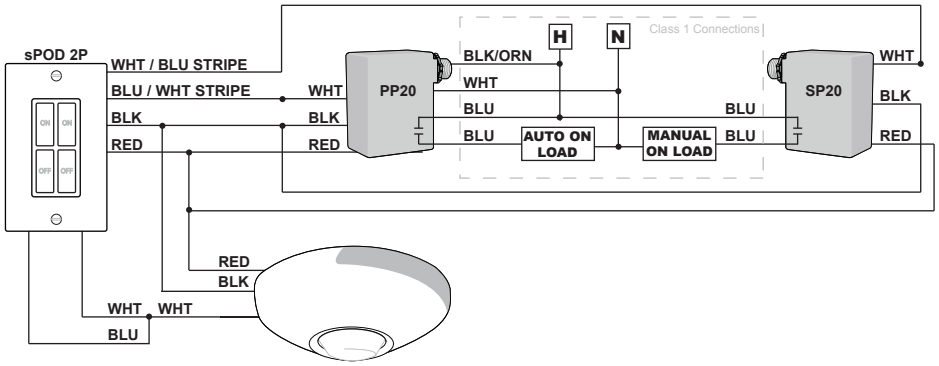
AD OUTDOOR PHOTOCONTROL
NON-ELECTRONIC: WIRE-IN BUTTON



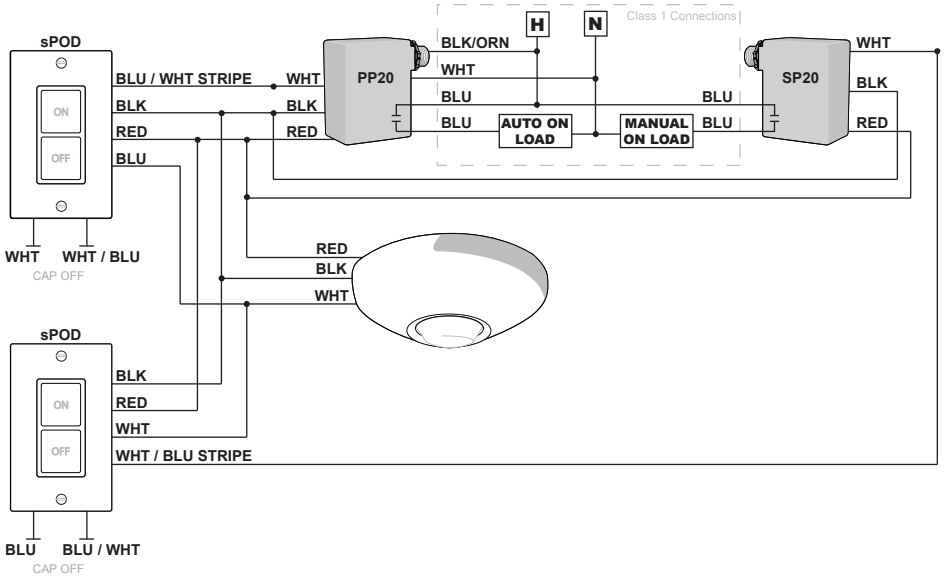
AF OUTDOOR PHOTOCONTROL
ELECTRONIC: WIRE-IN BUTTON



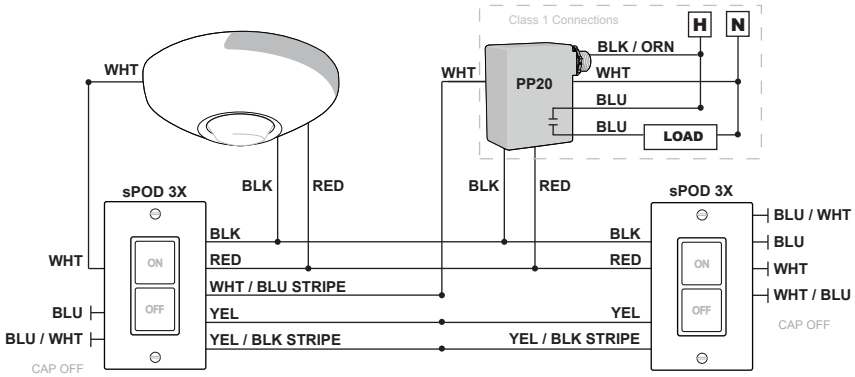
AG BI-LEVEL (AUTO-ON / MANUAL ON) SOLUTION W/ OCCUPANCY SENSOR: SINGLE GANG



AH BI-LEVEL (AUTO-ON / MANUAL ON) SOLUTION W/ OCCUPANCY SENSOR: TWO-GANG



AI 3-WAY MANUAL ON SOLUTION W/ OCCUPANCY SENSOR: SINGLE GANG



NOTES

PRODUCT INDEX

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Need More Info?

Sensor Switch has several literature pieces containing information on our products and services. PDFs of these pieces can be downloaded from our website; printed brochures can be obtained by calling Sensor Switch, Acuity Brands Controls, or your local sales representative.

LITERATURE

nLIGHT DESIGN GUIDE & CATALOG

#nCAT
1412.002

Learn all about Acuity Brands Controls' revolutionary lighting control system that cost-effectively integrates occupancy, schedule, daylighting, and dimming-based lighting control strategies.

SENSORPEDIA REFERENCE GUIDE

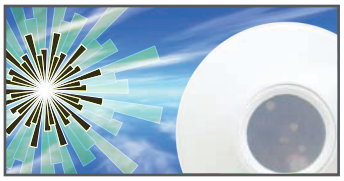
#SENSORPEDIA
1412.003

Need help choosing the appropriate Sensor Switch occupancy sensor for your space and application? The Sensorpedia is an occupancy sensor selection guide that will teach you everything you need to know!

DAYLIGHTING CONTROL BROCHURE

#DCB
1412.004

Daylight harvesting at its best! This brochure describes how Sensor Switch has engineered photocell technology and dimming control to a higher level with its daylighting control sensors - achieve maximum energy savings at a fraction of the cost of competitive solutions.



NIGHTLITE SENSOR BROCHURE

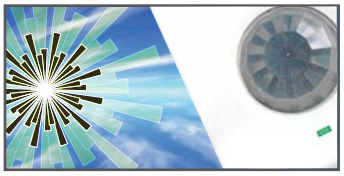
#NLB
1412.005

As a combination 24/7 night light and occupancy sensor that turns the lights off when the room is vacant, the NightLite Sensor is the perfect solution for hotel and hospital bathrooms where guests leave the light on all night. Learn all about this popular and stylish sensor in its own brochure.

DATA LOGGER BROCHURE

#DLB
1412.006

Monitoring your facility's lighting and occupancy patterns has never been easier. Learn all about our Data Logger Monitoring System in this brochure and discover the way you can quantify your building's savings potential.



AcuityBrands.
Controls

Sensor Switch
900 Northrop Road
Wallingford, CT 06492
1.800.PASSIVE
www.SensorSwitch.com