



### EXTENDED RANGE 360° SENSOR CEILING MOUNT • LOW VOLTAGE • DUAL TECHNOLOGY (PDT)

#### SPECIFICATIONS

##### FEATURES

- 100% Digital PIR Detection, Excellent RF Immunity
- 360° Coverage Pattern
- Patented Dual Technology with PIR / Microphonics Detection
- Push-Button Programmable
- Adjustable Time Delays
- Convenient Test Mode
- No Field Calibration or Sensitivity Adjustments Required
- 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 4.55" Dia. (11.56 cm)
- 1.55" Deep (3.94 cm)
- WEIGHT 6 oz
- MOUNTING
  - Ceiling Tile Surface
  - 3.5" Octagon Box
  - Single Gang Handy Box
- COLOR White

##### ELECTRICAL SPECS

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

##### ENVIRONMENTAL SPECS

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

##### OVERVIEW

Classrooms are ideal applications for the **CM PDT 10** Series Extended Range 360° occupancy sensor. When mounted at 9 ft (2.74 m), this sensor provides line of sight Passive Infrared (PIR) detection of walking type motions up to 28 ft (8.53 m) in all directions. Additionally, the **CM PDT 10** provides overlapping Microphonics™ technology to detect smaller motions and occupant movements that occur behind obstructions. When comparing small motion detection, the **CM PDT 10** far outperforms dual technology sensors that are specified with 2,000 ft² of coverage. Spaces with low ceiling heights are also best covered by the **CM PDT 10**.

##### SENSOR OPERATION

Sensors with Passive Dual Technology (PDT) first see motion using 100% digital Passive Infrared (PIR) detection and then engage Microphonics™ to hear sounds that indicate continued occupancy. This patented technology uses Automatic Gain Control (AGC) to dynamically self adapt a sensor to its environment by filtering out constant background noise and registering only noises typical of human activity. When occupancy is detected, a DC output goes high and can drive up to 200 mA of connected load. If needed, a 10 second grace period also allows the lights to be voice reactivated after shutting off. The sensor is powered with 12-24 VAC/VDC and typically operates with a **PP20** or **MP20** power pack, enabling 20 Amp circuits to be controlled.

##### LAMPMAXIMIZER®

This sensor also contains patented LampMaximizer technology that allows 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 manufacturers' recommendations. A standard occupancy time delay is also present that 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, but is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the unit's push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+, that determines the optimum time delay in order to maximize both lamp life and energy savings. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

#### OPTIONS

##### LOW VOLTAGE RELAY (R)

- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via a 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

##### OCCUPANCY CONTROLLED DIMMING (D)

- 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
- Only one sensor per zone needs to have dimming output

##### PHOTOCELL (P)

- 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 lights off

##### PHOTOCELL W/ DIMMING (ADC)

- 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

##### LOW TEMP/HIGH HUMIDITY (LT)

- Sensor electronics are coated for corrosion resistance
- Operates down to -4° F (-20° C)
- Required for cooler/freezer applications



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

#### ORDERING INFO CM PDT 10 [RELAY] [DIMMING/PHOTOCELL] [TEMP/HUMIDITY]

##### RELAY

- Blank = None
- R = Low Voltage Relay

##### DIMMING / PHOTOCELL CHOOSE ONE ONLY

- Blank = None
- D = Occupancy Controlled Dimming
- P = Photocell
- ADC = Photocell w/ Dimming

##### TEMP/HUMIDITY

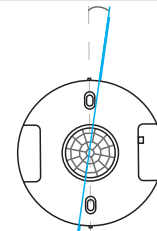
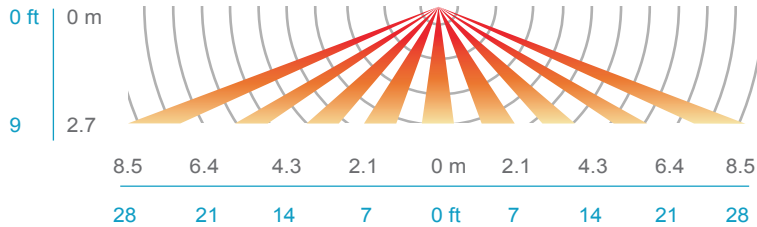
- Blank = Standard
- LT = Low Temp

## COVERAGE PATTERN

### 10 EXTENDED RANGE 360° LENS WITH MICROPHONICS™

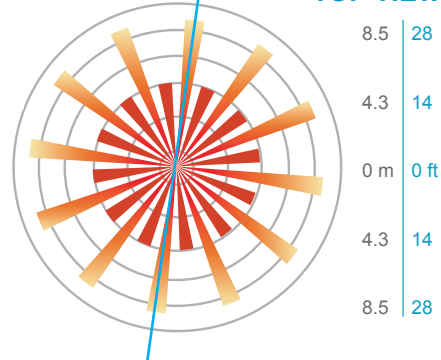
- Best choice for large motion (e.g. walking) detection
- Viewing angle of 67° in a 360° conical shaped pattern
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage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

#### SIDE VIEW



**Note:** Sensor's screw axis is offset 7.5° from a long detection segment

#### TOP VIEW



## WIRING (DO NOT WIRE HOT)

### STANDARD WIRING

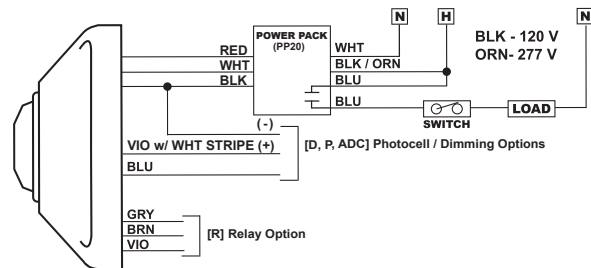
- RED** - Power Input (12-24 VAC/VDC)
- BLACK** - Common
- WHITE** - Occupancy State (high VDC for occupied)

### PHOTOCELL/DIMMING OPTIONS (D, P, ADC)

**BLUE** - Direct output to power pack for providing photocell control and/or secondary dim time out. Output is high VDC with occupancy & low light. Output also held high during secondary dim time out. For multi-level control, use two power packs and connect White wire to primary load and Blue to daylight load.

**VIOLET w/ WHITE STRIPE** - Connect to 0-10 VDC control wire (typically Violet) from 0-10 VDC dimmable ballast

**GRAY from Ballast** - Connect to sensor Black wire



### RELAY OPTION (R)

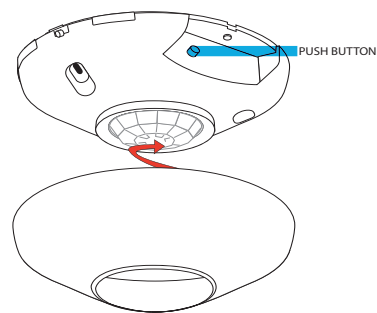
**GRAY / BROWN** - Connected during occupied state

**VIOLET / BROWN** - Connected during unoccupied state

**Note:** Relay is energized during unoccupied state

## INSTALLATION

- Mount sensor directly to a ceiling tile or a metallic grid (two self-tapping screws provided).
- Sensor's mounting holes also align with 3.5" octagon or single gang handy box (screws not provided).
- Sensor will detect motions crossing segments more effectively than motions parallel to beams.
- For optimal detection, position sensor such that segments are crossed upon entrance and unable to view outside the space.



\*At 9ft Mtg.

- A:** When walking across beam, detection will occur at approximately 28 ft (8.53 m)
- B:** When walking into beam, detection will occur at approximately 24 ft (7.32 m)

### PROGRAMMING

Refer to instruction card IC7.002 for default settings and directions on programming the sensor via the push-button.

**sensorswitch**

An Acuity Brands Company

**WARRANTY:** Sensor Switch warrants these products to be free of defects in manufacture and workmanship for a period of 60 months. Sensor Switch, upon prompt notice of such defect, will, at its option, provide a Returned Material Authorization number and repair or replace returned product.

**LIMITATIONS AND EXCLUSIONS:** This Warranty is in full lieu of all other representation and expressed and implied warranties (including the implied warranties of merchantability and fitness for use) and under no circumstances shall Sensor Switch be liable for any incidental or consequential property damages or losses.

**TS-CM-004A**