

**TYPICAL APPLICATIONS**

- T-shaped intersections
- Corridors & Hallways
- Pick Aisles in Distribution Centers

**FEATURES**

- PIR Occupancy Detection
- Communicates with Other Sensors
- Time Delay: 30 sec. to 20 minutes, selectable in 2.5 min increments
- Push-Button Programmable
- Green LED Activity Indicator
- 100 Hr. Lamp Burn-in Timer Mode

**AVAILABLE OPTIONS**

- Isolated Low Voltage Relay (-R)
- On/Off Photocell (-P)
- Auto Dimming Cntl. Photocell (-ADC)
- Low Temp/Hi Humidity (-LT)

**SPECIFICATIONS**

- Size: Circular, 4.55" Dia., 1.55" Deep (11.56 cm Dia., 3.94 cm Deep)
- Sensor Weight: 5 Ounces
- Sensor Color: White
- Mounting: Ceiling Tile Surface, Round Fixture or Junction Box
- Relative Humidity: 20 to 90% non-condensing
- Operating Temp: 14° to 160° F (-10° to 71° C)
- Storage Temp: -14° to 160° F (-26° to 71° C)
- UL, CUL, and Title 24 Compliant
- 5 Year Warranty
- Made in U.S.A.

**LOW TEMP/HI HUMIDITY(-LT)**

- Conformally coated Circuit Board is corrosion resistant from moisture
- Operates down to -40° F(-40° C)

**CM-10 SERIES**

*w/ Enhanced Daylighting Control Options!*



The *CM-10 Series* incorporates Passive Infrared (PIR) technology into an attractive and economical sensor to provide maximum viewing from the ceiling. When mounted at 9 feet, this sensor views up to 28 feet in all directions. Its circular coverage pattern is 56 feet in diameter and is designed for "walking" motions; making it ideal for T-shaped intersections in corridors, or other areas where wall mounting a sensor is not practical. A long hallway for example may require a HW-13 Series Hallway sensor at each end, with *CM-10's* mounted in the center to fill in the distance. Low ceiling heights are also best covered by the *CM-10*. For example, when



mounted at only 7 feet, the height of pick aisles in many distribution centers, the *CM-10* provides a 32 foot diameter pattern of coverage. In applications where detection of minor motion is also required, use the *CM-PDT-10 Series* Dual Technology sensor.

**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 DC output goes high and can drive up to 200 mA of connected load. The sensor is powered with 12 to 24 VAC/VDC and typically operates with a PP-20 or MP-20 Power Pack; enabling complete 20 Amp circuits to be controlled. An internal timer, factory set at 10 minutes, keeps the lights "On" during brief periods of no activity. This timer is selectable at 2.5 minute increments from 30 seconds to 20 minutes, and is reset every time occupancy is re-detected. This state-of-the-art design requires no manual field adjustments.

**DAYLIGHTING CONTROL OPTIONS**

For spaces with abundant natural light from windows or skylights, this series offers an On/Off Photocell (-P) option and an Automatic Dimming Control (-ADC) Photocell option. The -P option is ideal for public areas like vestibules, corridors, or restrooms; while the -ADC option is perfect for classrooms and private offices. As the daylight levels change in the room, both options insure that an adequate light level is maintained according to a programmable set-point value. The -P option provides two modes of operation; one simply inhibits the lights from turning on, while the other has full On/Off control of the lights. The -ADC option allows the sensor to control a dimmable ballast. It also provides a secondary dim time-out that enables the lights to go to a dim setting after one time-out and then turn fully off after a second time-out.

**INTERNAL LOW VOLTAGE RELAY OPTION (CM-10-R)**

To enable a sensor to interface with a building management system, the -R option provides dry contact closure via a SPDT, 1 Amp, 40 Volt relay. The relay coil is energized and changes state 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 .

**CATALOG INFORMATION**

MODEL #	DESCRIPTION	TEMPERATURE	OP. VOLTAGE	CURRENT
CM-10	Passive Infrared Ceiling Mount Sensor	14° to 160° F	12 to 24 VAC/VDC	4 mA
Add suffix				
-R	SPDT Relay, 1 Amp			16 mA
-P	On/Off Photocell			4 mA
-RP	Relay & On/Off Photocell			16 mA
-ADC	Automatic Dimming Control Photocell			4 mA
-LT	Low Temp/High Humidity	-40° to 160° F		

**WIRING INSTRUCTIONS**

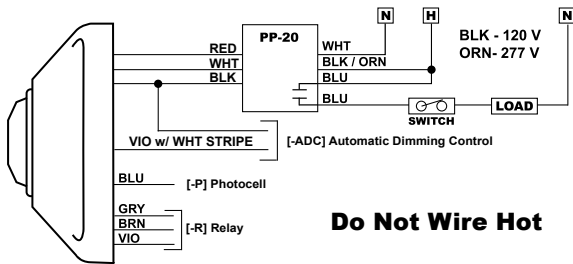
Wire lead connections are Class II, 18 to 22 AWG.

**STANDARD CM-9**

RED - 12 to 24 VAC/VDC

BLACK - Common

WHITE - Output (HI DC for Occupancy)



**RELAY OPTION (-R)**

GRAY / BROWN - Connected during Occupied state

VIOLET / BROWN - Connected during Unoccupied state

Note: Relay is energized during Unoccupied state

**PHOTOCELL OPTION (-P)**

BLUE - Photocell output (High: Occupied & Low Light)

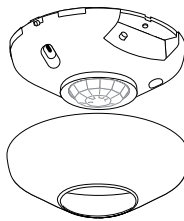
Use Blue wire from sensor in place of White wire. For multi-level control, use 2 Power Packs and connect White to primary load and Blue to daylight load.

**AUTOMATIC DIMMING CONTROL (-ADC)**

VIOLET/WHITE striped - Connect to Violet wire from 0-10 VDC dimmable ballast. Also connect ballast Gray wire to sensor Black wire. (Note: If both the -P and the -ADC options are selected the "Inhibit" mode of the -P option is not available.)

**MOUNTING CONSIDERATIONS**

The CM-10 is provided with 2 self tapping mounting screws. The sensor typically mounts directly to the ceiling tile, or to the metallic grid. However, if desired, the mounting holes are slotted to line up with a standard round, or rectangular box (screws not provided).



**INSTALLATION CONSIDERATION**

Passive Infrared sensors detect motions crossing the beams much stronger than when entering the beams. (See field-of-view diagram.) The discrete outer beams used for initial detection can be aligned for maximum coverage. Multiple CM-10 Sensors may be used to cover complete corridors as shown.

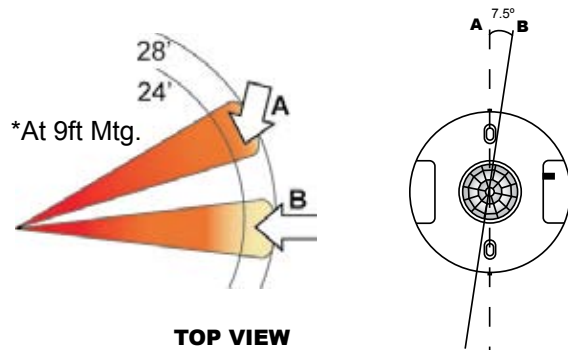
Note: Heat producing sources controlled by the sensor must not be in the view pattern of the sensor. Symptom: Sensor cycles and appears to continually stay on. Solution: Move sensor or mask lens segments that view the source.



**Hallway Intersection**

A: When walking across beam, detection will occur at approximately 28 feet.

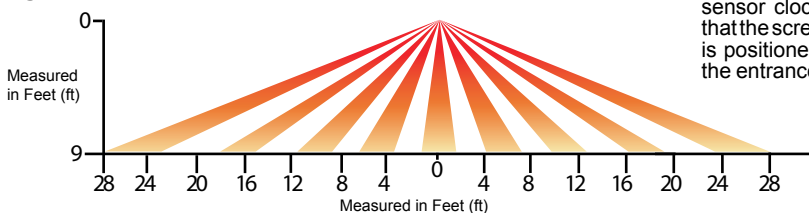
B: When walking into beam, detection will occur at approximately 24 feet.



**FIELD OF VIEW**

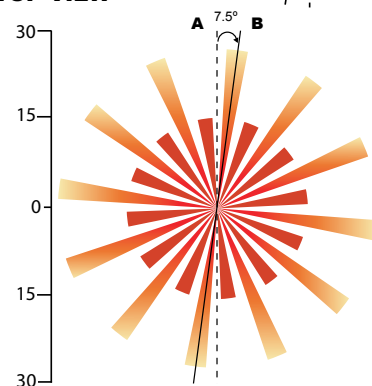
The CM-10's dome lens provides a maximum viewing angle of 67° in a complete 360° conical pattern.

**SIDE VIEW**



Note: For maximum distance rotate the sensor clockwise so that the screw axis(A) is positioned 7.5° off the entrance axis(B).

**TOP VIEW**



**WARRANTY:** Sensor Switch, Inc. warrants these products to be free of defects in manufacture and workmanship for a period of sixty months. Sensor Switch, Inc., upon prompt notice of such defect will, at its option, provide a Returned Material Authorization number and a replacement 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, Inc. be liable for any incidental or consequential property damages or losses.



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