sensorswitch®

CM 9

STANDARD RANGE 360º SENSOR
CEILING MOUNT • LOW VOLTAGE • PASSIVE INFRARED (PIR)

SPECIFICATIONS

FEATURES
- 100% Digital PIR Detection, Excellent RF Immunity
- 360º Coverage Pattern
- Push-Button Programmable
- User Adjustable Time Delays
- No Field Calibration or Sensitivity Adjustments Required
- 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 defatult)
- 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
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 **CM 9** Series occupancy sensor offers amazing performance and sensitivity to small motions for a standard range Passive Infrared (PIR) sensor. Ideal for small rooms with drop ceilings and areas without obstructions, the **CM 9** is a snap to install. Its light weight allows surface mounting to drop ceilings or a ceiling grid. The **CM 9** sensor can cover entire private offices or smaller rooms by itself, however it is also the ideal lead sensor for odd shaped rooms. For example, a **CM 9** in a restroom vestibule can communicate with a **CM PDT 9** Dual Technology sensor in a main stall area. Another application is a **CM 9** covering an entrance hall to a classroom and communicating with a **WV PDT 16** sensor covering the main room. In both cases the lights would be activated on by the **CM 9**. For mounting above 15 ft (4.57 m), see the **CM 6** Technical Data Sheet.

SENSOR OPERATION

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 12-24 VAC/VDC and typically operates with a **PP20** or **MP20** power pack, enabling complete 20 Amp circuits to be controlled. This innovative sensor requires no field calibration or sensitivity adjustments.

LAMPMAXIMIZER®

This sensor also contains patent pending 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 manufacturer 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 is corrosion resistant to moisture
- Operates down to -40º F/C

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

ORDERING INFO

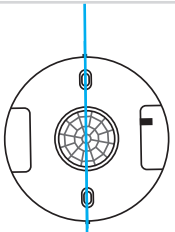
CM 9 [RELAY] [DIMMING/PHOTOCELL] [TEMP/HUMIDITY]

RELAY	DIMMING / PHOTOCELL *CHOOSE ONE ONLY*	TEMP/HUMIDITY
Blank = None	Blank = None	Blank = Standard
R = Low Voltage Relay	D = Occupancy Controlled Dimming	LT = Low Temp
	P = Photocell	
	ADC = Photocell w/ Dimming	

COVERAGE PATTERN

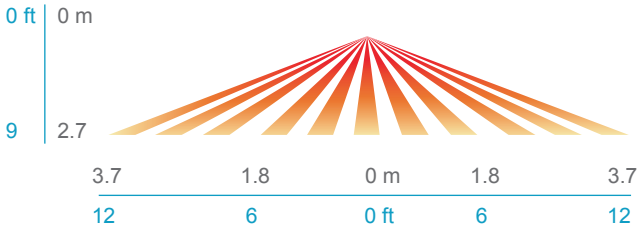
9 STANDARD RANGE 360° LENS

- 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

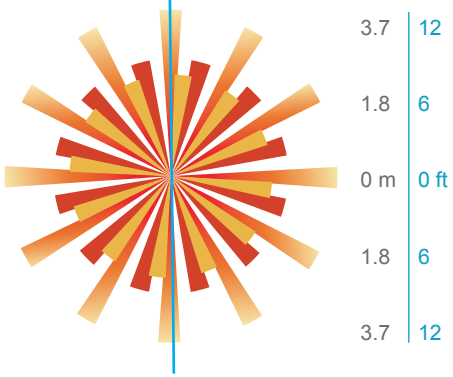


Note: Screw axis is aligned with a long detection segment

SIDE VIEW



TOP VIEW



WIRING (DO NOT WIRE HOT)

STANDARD WIRING

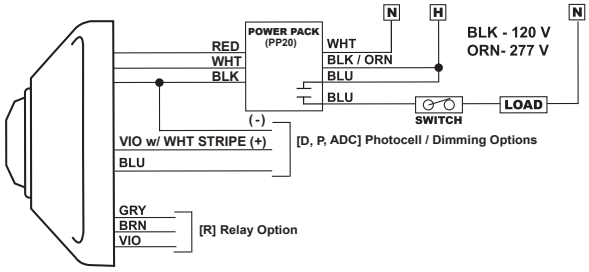
RED - Power Input (12-24 VAC/VDC)
BLACK - Common
WHITE - Occupancy State (high VDC for occupied)

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

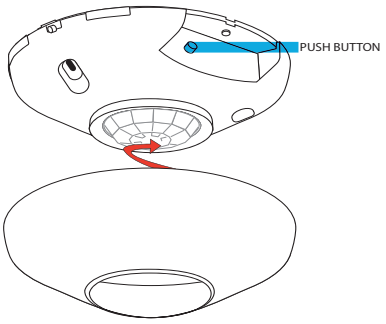


RELAY OPTION (R)

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.



PROGRAMMING

Refer to instruction card IC7.001 for default settings and directions on programming the sensor via the push-button.

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