

TYPICAL APPLICATIONS

- Daylight Harvesting
- On/Off Lighting Control

FEATURES

- Self-contained Relay, no Power Pack needed
- Capable of finding optimum set-point
- Digitally Programmable via simple push button commands
- No Minimum Load Requirements
- Green LED Activity Indicator
- 100 Hour Lamp Burn-in Timer Mode

AVAILABLE OPTIONS

- Dual Zone Control (DZ)
- 347 VAC, 208/240 VAC or 480 VAC
- Low Temp/Hi Humidity (LT)

SPECIFICATIONS

- Size: CMRB: 3 5/8" x 3 5/8" x 1 1/4" (9.2 cm x 9.2 cm x 3.175 cm)
CMR: 4.55" Dia., 1.55" Deep (11.56 cm Dia., 3.94 cm Deep)
- Weight: 5 oz (CMRB), 5 oz (CMR)
- Sensor Color: White
- CMRB Mounting: 1/2 inch knockout
- CMR Mounting: Round Fixture Box or Single Gang Handy 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)
- Load Rating:
 - 800 W @ 120 VAC
 - 1200 W @ 277 VAC
 - 1500 W @ 347 VAC
 - 5 Amps @ 208/240 VAC
 - 5 Amps @ 480 VAC
- 1/4 HP Motor Load
- Frequency: 50/60 Hz
- UL, CUL, and Title 24 Compliant
- 5 Year Warranty
- Assembled 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)

CMR PC

CMRB PC

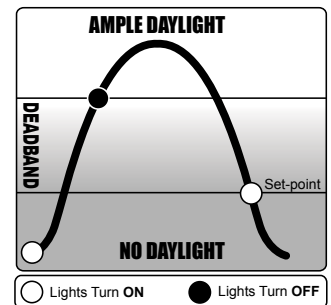
w/ Dual Zone Option!



The *CMR(B) PC Series* of On/Off Photocell sensors provide the industry's most intelligent control of lighting for daylight harvesting applications. Ideal for public spaces with windows like vestibules, corridors, or bathrooms; the sensors work by monitoring daylight conditions in a room, then controlling the lighting so as to insure that adequate lighting levels are maintained. The *CMR(B) PC* has on/off lighting control; turning off the lights when sufficient daylight is present and turning them on when additional lighting is necessary. The *CMR(B) PC Series* sensors are line powered and can switch loads directly without the need for a power pack. The CMR version sensors are ceiling mounted, while the CMRB versions are specifically designed to mount on the end of a linear fluorescent fixture. To add dimming control to the on/off control provided by the *CMR(B) PC*, see the data sheet on the CMR(B) PC ADC sensor.

CMR(B) PC ON/OFF OPERATION

The lights turn on when the space's overall light level drops below a programmable threshold called a set-point. The lights turn off when light is above the set-point plus a 10 to 20% safety factor and deadband. The safety factor will prevent the system from cycling when the light level is very near the set-point. The deadband is the level of light contributed by the artificial lights being controlled. This level is tracked so if the lighting conditions change (for example a lamp burns out) the point at which the lights turn off is adapted accordingly. If the photocell is looking up at skylights and can not view the lights being controlled, there is no deadband and the sensor is said to be working open loop. There is also an adaptive 5-25 minute delay before the photocell turns the lights off to prevent the system from cycling on a cloudy day.



DUAL ZONE (DZ) OPTION

With the DZ option, a second independent relay is provided to control an additional zone of lighting according to one of two operational modes. The default mode, referred to as *Duo* operation, is ideal for A/B (also called inboard/outboard) switching applications as it determines the necessary On/Off combination of the zones in order to maintain adequate lighting. The alternate mode uses a relative set-point for the second zone that is a selected percentage higher than the primary zone's set-point. This mode accounts for the fact that daylight contribution diminishes as the distance from the source (windows) increases. Called *percentage* operation, this second mode is ideal for classrooms with individually controlled parallel rows of lights. A single shared set-point is used by both modes and can be user programmed or automatically determined by the sensor itself.

Note: The DZ option is not available with the 480 VAC option (480) or the 208/240 VAC (208) option. These options require both relays in order to switch two phases of a 480 VAC or 208/240 VAC load. The DZ option switches the two relays independently.

Model Numbering System: [SERIES #] [DUAL ZONE*] [VOLTAGE] [TEMP/HUMIDITY]

SERIES #	DESCRIPTION	DUAL ZONE	VOLTAGE	TEMP / HUMIDITY
CMR PC	On/Off Photocell Sensor Ceiling Mount, Line Voltage	Blank = Single Zone DZ* = Dual Zone	Blank = 120/277 VAC 208 = 208/240 VAC	Blank = 14° to 160°F LT = -40° to 160° F
CMRB PC	On/Off Photocell Sensor Fixture Mount, Line Voltage	*Not avail. with 208 or 480 option	347 = 347 VAC 480 = 480 VAC	

LIGHT LEVEL SET-POINT

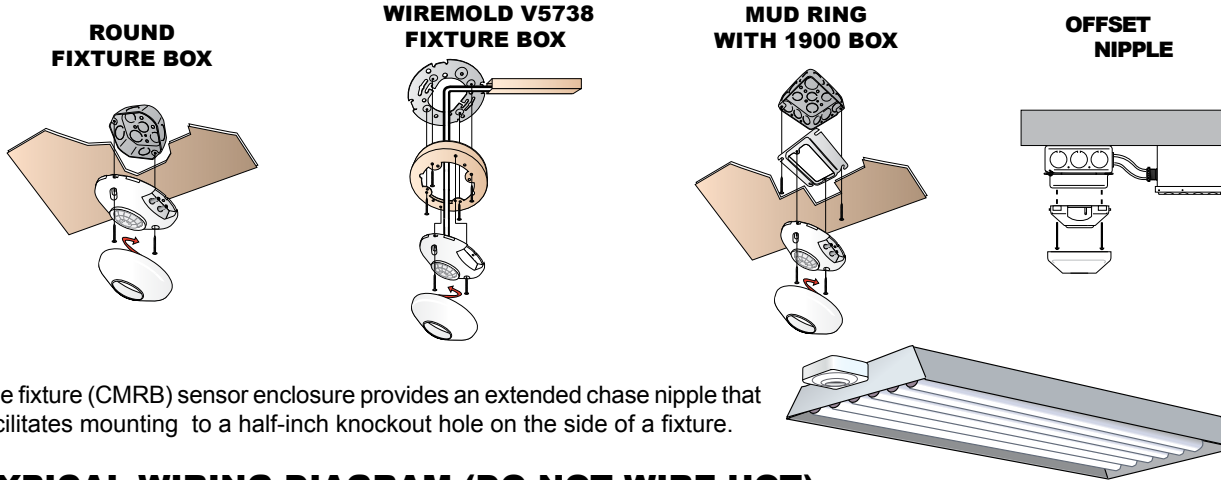
The sensor functions by comparing the amount of daylight available with a defined acceptable lighting level. This threshold, called the set-point, is utilized in all daylight harvesting lighting control decisions. The sensor can find its optimum set-point via the **Automatic Set-Point Programming** mode. In this mode, the sensor sets the minimum light level to be the amount contributed by the artificial lights being controlled. It is assumed that the space is properly lit by design, however, if this is not the case the set-point may be easily adjusted to the occupant’s preferences. All modes and settings are entered digitally via a push button sequence. Once programmed, the exact value of the set-point (in foot candles) can be read out from the sensor via a series of LED flashes.

DIGITAL SET-POINT CONTROL

Each sensor contains a microcontroller that enables the user to engage the Automatic Set-Point Programming mode or to manually set / adjust the set-point. The manual process involves calculating and inputting the exact foot-candle value of the desired set-point into the sensor. It is important to note that the set-point is the light level required at the face of the sensor and that this value will be much different than the level required at a work surface. Typically, light levels at the ceiling are 3 to 5 times less than the work surface. For example, if 50 fc is desired at the work surface, the sensor should be set at 10 fc. For best results, measure the levels at both locations using a foot-candle meter before programming the set-point.

INSTALLATION

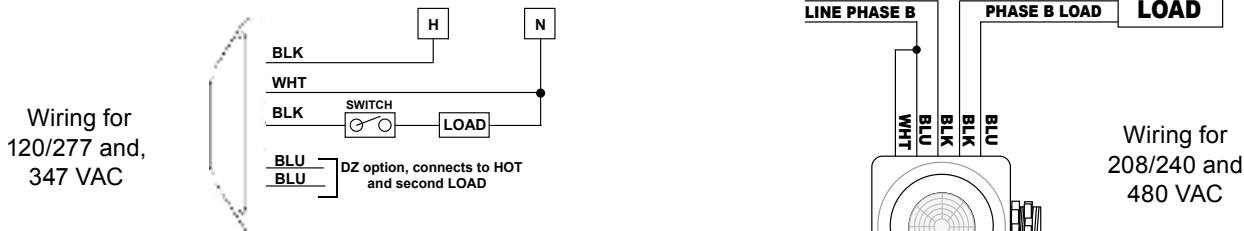
The ceiling (CMR) sensor enclosure accommodates mounting to a variety of junction boxes ranging in size from a single gang mud ring at a 3.28” spacing, up to a round fixture box spacing of 3.5”.



The fixture (CMRB) sensor enclosure provides an extended chase nipple that facilitates mounting to a half-inch knockout hole on the side of a fixture.

TYPICAL WIRING DIAGRAM (DO NOT WIRE HOT)

The sensor uses Sensor Switch’s patented reversible wiring; black to hot and black to load (DZ, 208, and 480 option adds a pair of blue wires for the second zone or phase). For 120, 277, and 347 VAC the white wire connects to neutral. For 208 and 480 VAC version the white wire connects to either the phase 1 or phase 2 line input. Black wires are replaced with red wires for 347 VAC.



Note: Once installed, the sensor may take a few minutes to become active. Additionally, there is a 45 second delay before switching from off to on (this delay is 55 seconds when connected to 50 Hz).

WARRANTY: Sensor Switch warrants these products to be free of defects in manufacture and workmanship for a period of sixty 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, Inc. be liable for any incidental or consequential property damages or losses.