

TYPICAL APPLICATIONS

- Daylight Harvesting
- Combination On/Off Switching and Continuous Dimming Photocell

FEATURES

- Full On/Off Switching of Lighting
- Works as Stand Alone Unit or with Occupancy Sensor System
- Capable of finding optimum set-point
- Digital Set-Point Control
- Programmable via simple push-button commands
- Outputs to Power Pack or Lighting Control System via SPDT Relay
- Green LED Activity Indicator
- 100 Hour Lamp Burn-in Timer Mode

AVAILABLE OPTIONS

- Dual Zone Control (-DZ)
- Low Temp/Hi Humidity (-LT)

SPECIFICATIONS

- Size: 3 5/8" H x 3 5/8" W x 1 1/2" D (9.2 cm x 9.2 cm x 3.8 cm)
- Sensor Weight: 6 Ounces
- Sensor Color: White
- Mounting: 1/2" knockout in 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)
- Operating Voltage: 12-24 VAC/VDC
- 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)

CMB-PC-ADC

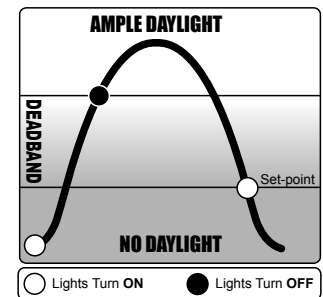
w/ Dual Zone Option!



The CMB-PC-ADC series combines the CMB-PC On/Off Photocell sensor with the CMB-ADC Automatic Dimming Control sensor to 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 CMB-PC-ADC sensors can be used alone or as part of an occupancy sensor system. Additionally with the Dual Zone (-DZ) option, a second set of customized control outputs is provided. The sensors are powered with 12 to 24 VAC/VDC and typically operate with a PP-20 or MP-20 Power Pack; enabling complete 20 Amp circuits to be controlled. To add dimming control to the On/Off switching provided by the CMB-PC-ADC, see the Technical Data Sheet on the CMB-ADC sensor.

DAYLIGHT HARVESTING OPERATION

The sensor controls a 0-10 VDC dimmable ballast to achieve maximum daylight harvesting while maintaining a minimum light level referred to as the "set-point". When no daylight is available, the sensor allows the dimmable ballast to operate at its full bright level (10 VDC). As daylight increases and begins to contribute to the overall light level of the room, the Automatic Dimming Control (ADC) feature starts dimming the ballast proportionally. When sufficient daylight is present to maintain the set-point without any contribution from the lights, the sensor will switch off the ballast completely. The lights will remain off until the daylight level drops below the set-point. At this point, the lights will be turned on with the ballast set at its full dim level. As the daylight levels fall further, the ADC feature will again take control of the ballast; reducing the dim level (increasing the brightness) in order to achieve the necessary light level. At the point when all daylight contribution is gone, the ballast will be back at its full bright level. To make the series of adjustments unnoticeable to room occupants, a 10 to 20% safety factor is maintained to prevent the system from cycling when the light level is very near the set-point. There is also a 20 minute delay before the sensor switches the lights off to prevent the system from cycling on a cloudy day; and a 45 second delay before switching from off to on. "



DUAL ZONE (-DZ) OPTION

With the -DZ option, a second low voltage output 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 switching applications (also called inboard/outboard) 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.

Model Numbering System: CMB-PC-ADC-[DUAL ZONE]-[TEMP/HUMIDITY]

SERIES #	DESCRIPTION	DUAL ZONE	TEMP/HUMIDITY
CMB-PC-ADC	Combination On/Off & Automatic Dimming Control Photocell - Fixture Mount, Low Voltage	Blank = Single Zone -DZ = Dual Zone	Blank = 14° to 160° F -LT = -40° to 160° F

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 preference. 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.

WIRING INSTRUCTIONS

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

STANDARD CMB-PC-ADC

WHITE - Outputs high VAC/VDC (from Brown wire) when sensor calls for Lights "On" (eg. the room is Dark)

BLUE - Outputs high VAC/VDC (from Brown wire) when sensor calls for Lights "Off" (eg. adequate daylight light is present)

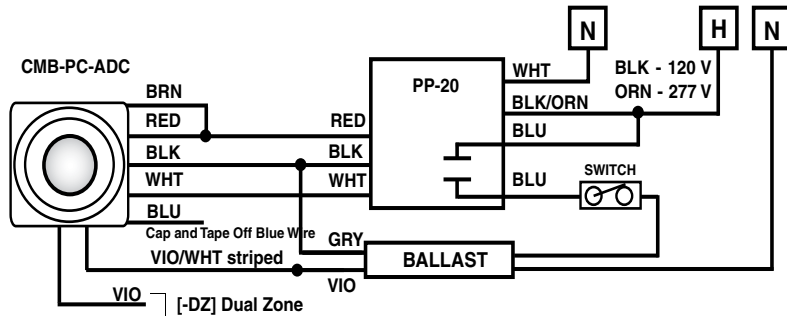
RED - 12 to 24 VAC/VDC

BLACK - Common

BRN - Connect to Low Voltage Control input (Red wire on a Power Pack, White wire on an occupancy sensor)

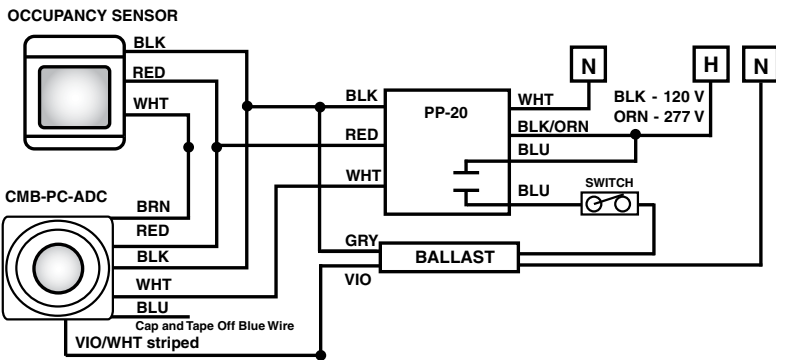
WIRING TOGETHER WITH OCCUPANCY SENSORS

Wire upstream occupancy sensor White wire to sensor Brown wire. When the space is unoccupied, the lights stay off regardless of daylight levels. However when occupied, the photocell sensor will control the lights according to daylight level and set-point.



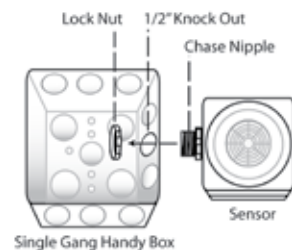
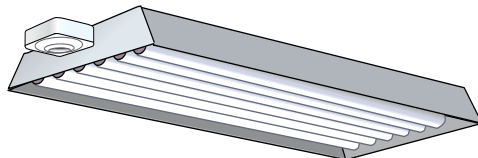
DUAL ZONE OPTION (CMB-PC-ADC-DZ)

BLUE wire will output high DC when sensor calls for Lights "On" for Zone 2. (Note: With the -DZ option the SPDT Relay is no longer present and the White wire will output only DC)



TYPICAL MOUNTING

The CMB-PC-ADC can easily be mounted to a single gang handy or 1900 box by placing the half inch chase nipple through the half inch knockout. Then, the chase nipple is tightly secured by placing the lock nut on the chase nipple located inside of the box. The CMB-PC-ADC can also mount in a half-inch knockout hole on the side of a fixture.



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 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.