

Issue: #TB171
Date: February 20, 2009
Topic: Light level sensor on PW/DW/UW wall switch occupancy sensors

Activating the light level sensor in PW/DW/UW occupancy sensors for simple daylighting control in selected applications

The use of daylighting controllers is on the rise in spaces with an abundant contribution of reflected daylight. By dimming, or turning electric lights off during long periods of the day, these controllers return significant energy savings.

For most daylighting applications, devices designed specifically for daylighting control, such as Watt Stopper's LightSaver® products, will provide the best results. However, in certain applications customers can successfully use the light level sensor that is an integral component of PW/DW/UW wall switch sensors to add a basic daylight control function to small areas under occupancy sensor control.

When the light level sensor is activated on a PW/DW/UW occupancy sensor set for automatic-on operation, it will save energy by not turning controlled lighting on if there is sufficient ambient light when the space becomes occupied. If the ambient light level is insufficient, and occupancy is sensed, the sensor will switch the controlled lighting on and hold lighting on as long as the space remains occupied. A user-established threshold, or setpoint, is referenced to determine whether or not the ambient light that is sensed is sufficient.

On/Off daylighting control is suggested for spaces with these characteristics:

- Occupants are engaged in transient activities, or activities that will not be interrupted by lighting switching on.
- Space receives a great deal of reflected daylight (2-3 times minimum electric light levels).
- The ambient light level does not change dramatically during typical days.
- The lighting fixtures are mounted high, outside the normal field of view of the sensor.
- The occupants have limited view of lamps, and will not be distracted if they switch on.

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On/Off daylighting control is NOT recommended for spaces with these characteristics:

- Occupants are engaged in activities requiring high levels of concentration.
- The sensor location faces a direct daylight source.
- There is not enough daylight to warrant a daylighting level (e.g. a closet or bathroom).
- There are significant changes in ambient lighting levels.
- The lighting fixtures have a direct effect on the sensors.
- Spaces where manual overrides are often used.

Enabling light level control and setting a threshold for a PW, DW or UW sensor:

The light level can be set with connected loads ON or OFF.

1. Make sure the room is lit appropriately.
2. Remove the faceplate and access the DIP switches. Record the position of switches 1, 2 and 3.
3. Put the sensor into TEST mode by setting DIP switches 1, 2, and 3 to OFF. You have 5 minutes to complete the procedure.
4. Press and hold the ON/OFF button (Relay 1 button on dual relay models, PW/DW/UW-200) for 3 seconds, until you hear a beep.
5. Step away from the sensor making sure your body does not cast a shadow on the sensor. After 25 seconds a beep sounds, indicating that the threshold level is set. This threshold is retained, even if power is lost, until it is re-set or disabled.
6. TEST mode will automatically cancel after 5 minutes. Return DIP switches 1, 2 and 3 to their original positions to restore the sensor's time delay.

Notes:

1. To disable light level control, press and hold the ON/OFF button for 7 seconds, until a double beep tone sounds.
2. The light level control affects only Relay 2 in dual relay occupancy sensor (PW/DW/UW-200), though it is activated and deactivated using the ON/OFF button for Relay 1.