

PRECAUTIONS

- CAUTION: RISK OF ELECTRICAL SHOCK. Turn power off at service panel before beginning installation. Never wire energized electrical components.
- Read and understand all instructions before beginning installation.
- NOTICE: For installation by a licensed electrician in accordance with National and/or local Electrical Codes and the following instructions.
- NOTICE: For indoor use only.
- CAUTION: USE COPPER CONDUCTOR ONLY
- Confirm device ratings are suitable for application prior to installation. Use of device in applications beyond its specified ratings or in applications other than its intended use may cause an unsafe condition and will void manufacturer's warranty.
- NOTICE: Do not install if product appears to be damaged.
- NOTICE: Connect to field wiring rated for 60°C or greater.
- **SAVE THESE INSTRUCTIONS!**

DESCRIPTION

The LightHAWK Dimming Dual Technology Wall Switch is an intelligent passive infrared and ultrasonic self-adapting occupancy/vacancy sensor with integral 0 - 10V dimming that is designed to replace existing wall switches.

SPECIFICATIONS

- 1000 sq. ft. coverage area
- Single Relay 120/277VAC, 50/60Hz operation
- Single Relay 347VAC, 50/60Hz operation (Canadian version)
- Electrical Ratings: (Each Output Separately)
 - 120V: 0-1000W Ballast, E-Ballast, LED, Tungsten; Motor Rating: 1/6 HP
 - 277V: 0-1200W Ballast, E-Ballast, LED; Motor Rating: 1/6 HP
 - 347V: 0-1500W Ballast, LED; Motor Rating: None
- Adjustable Time Delay: 4-30 minutes, self-adapts based on occupancy
- Ambient Light Level Adjustment: 10 to 500FC
- 0 - 10V dimming, capable of sinking up to 30 mA
- UL, cUL Listed

INSTALLATION

1. Turn power OFF at the service panel.
2. Remove the current wall switch, if applicable.
3. Wire as shown in Figure 1.
4. Install sensor in wall box using mounting screws provided.
5. Restore power to the sensor and allow it to initialize (up to 2 minutes).
6. Sensor is factory configured to provide the most energy savings. If additional adjustments are required, see the ADJUSTMENTS section.
7. If daylight harvesting is desired, calibrate the sensor's photocell as described in the PHOTOCCELL CONTROL section.
8. Install a decorator style wall plate (not included).

TEST MODE

1. Make sure lights are ON.
2. Press and hold both the ON/RAISE and OFF/LOWER buttons for 10 seconds. Lights will cycle OFF then back ON. Release both buttons.
3. Sensor is now in Test Mode (NOTE: While in Test Mode the sensor will operate in Automatic ON/Automatic OFF mode). Vacate room; lights should turn OFF after 5 seconds. Wait 5 seconds after turn OFF before re-entering space. Step back into room, lights will turn back ON. Repeat walk test as necessary to confirm sensor is operating and detecting in the area as desired.
4. To exit Test Mode, press any button. (NOTE: Sensor will automatically exit Test Mode after sixty (60) minutes.)

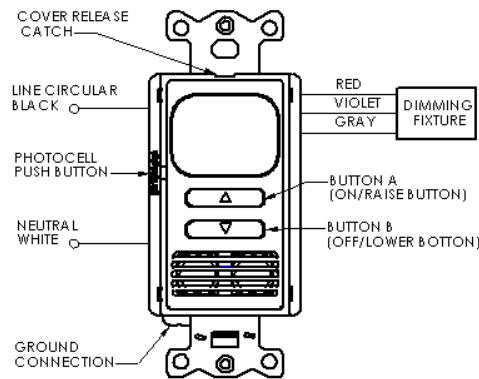


Figure 1- Wiring Diagram

MANUAL OVERRIDE

Button	Manual Operation	Current State: Lights On	Current State: Lights Off
ON/RAISE	Tap (less than 300ms)	Increase light level by 2%.	Lights turn on to last saved level.
	Press & Release (300ms to 1 sec)	Increase light level by 2%.	Lights turn on to last saved level.
	Press & Hold (Greater than 1 sec until release)	Light level ramps up to max output. Upon release, increasing stops.	Lights turn on to last saved level and ramps up to max level. Upon release, increasing stops.
OFF/LOWER	Tap (less than 300ms)	Decrease light level by 2%.	Lights turn on to last saved level.
	Press & Release (300ms to 1 sec)	Save current level and turn lights off. (NOTE: Sensor input will be ignored while occupancy is detected)	Lights turn on to last saved level
	Press & Hold (Greater than 1 sec until release)	Light level fades down to min level. (NOTE: Lights do not turn off)	Lights turn on to last saved level and fade down to min level. Upon release, decreasing stops.

PHOTOCELL CONTROL

The photocell is used to detect if other light sources such as sunlight, are sufficient to illuminate the space without turning on the controlled lights. The sensor is shipped from the factory with the photocell control disabled. If use of the photocell is desired, calibrate the photocell set point as follows:

1. With the light level at the desired level where the controlled lights should be off, PRESS and RELEASE the photocell set button using the end of a paper clip or small bladed screwdriver.
2. Step back from the sensor to avoid changing ambient light levels in the room. During calibration the sensor will turn the lights OFF then back ON.
3. After the calibration process, the sensor will return to its programmed mode of operation. During occupancy, the sensor will turn lighting OFF sixty (60) seconds after reaching or exceeding the set point level. When the lighting level drops below the set point level the sensor will turn the lights ON.

ADJUSTMENTS

The following switch adjustments require that the sensor's cover be removed. Remove the cover by inserting a small blade screwdriver into the catch at the top of the sensor and gently pry the cover off. Set the adjustment switches as desired (see CONFIGURATION SWITCH SETTINGS section). Factory default is all switches to the left (OFF). To re-install cover, place cover directly over the sensor and align the cover's four (4) catches with the recesses in the sensor housing. Snap cover onto housing making sure that all catches are securely in place.

CONFIGURATION SWITCH SETTINGS – BANK A

Switch 1 – Sensor Operation

Programs the sensor for either Manual ON/Automatic OFF operation or Automatic ON/Automatic OFF operation. When set to Manual ON/Automatic OFF mode (vacancy mode) lights are turned ON by manually pressing the ON/RAISE button. If the sensor times out and turns the lights OFF in the Manual ON/Automatic OFF mode while the space is still occupied, any motion detected within thirty (30) seconds will automatically turn the lights back ON, without requiring the user to press the ON button. NOTE: Switch 1 has no function on vacancy only model (Cat. No. Suffix "M")

Switch 2 – Last Level ON Recall

The default operation is for the sensor to turn the lighting on to the same level it was at when it turned off. Set switch 2 to ON to have the sensor turn on to a pre-programmed light level. Use switch 3 in BANK B below to set the occupied dimming level. Once a fixed light level has been programmed, the sensor will turn the lights on to the fixed level.

Switch 3 – Adaptive or Fixed Timer

Controls selection between Adaptive Timer Mode and Fixed Timer Mode. In Adaptive Timer Mode, the sensor automatically self-adjusts its timeout delay to optimize energy savings. The sensor will initialize its timer value to eight (8) minutes. If the Bank B Timer Select 0 and Timer Select 1 switches have been set to four (4) minutes, this will be the smallest timer value used. In Fixed Timer Mode, the sensor's self-adapting timer functions are disabled and the sensor's timeout delay is set according to the Bank B Timer Select 0 and Timer Select 1 switch settings.

Switch 4 – Adaptive Reset

The sensor is equipped with Hubbell Building Automation's patented self-adaptive IntelliDAPT® technology which automatically adjusts the sensor's sensitivity and timer settings to optimize performance based on occupancy patterns. The sensor constantly learns and adjusts appropriately. If the learned settings need to be reset (e.g. when relocating sensor to another area), toggle the switch ON then OFF. The adaptive timer is reset according to the Bank B Timer Select 0 and Timer Select 1 switches. The adaptive sensitivity is reset to factory default. The photocell sensor settings are also reset to factory default (disabled) such that the sensor will turn on the light(s) in response to occupancy regardless of ambient light levels in the lighted space. (NOTE: Adaptive reset can also be achieved by pressing and holding the photocell set button for ten (10) seconds.)

Switch 5 – Relay Bypass

If it is necessary to service the controlled circuits without de-energizing them at the breaker panel (NOTE: this is not recommended as a standard procedure), perform the following steps:

1. With the lights ON, set the relay bypass switch to the ON position.
2. Push the button(s) to turn the lights OFF.
3. Push the button(s) again to verify override (lights should not come back on).

The relay bypass switch will now interrupt sensor operation, preventing output(s) from turning ON again, regardless of occupancy or pushbutton conditions. To return the sensor to normal operation, flip the relay bypass switch to the OFF position. To confirm sensor is operating normally, lights should now turn ON and OFF when the button(s) are pressed.

CONFIGURATION SWITCH SETTINGS – BANK B

Switches 1 and 2 – Timer Settings

Sets the length of time lights will remain ON after last motion is detected. The timeout value can be set to 4, 8, 16 or 30 minutes.

See Bank A – Switch 3 - Adaptive or Fixed Timer section for additional information.

Switch 3 - Set the Occupied Dimming Level

Switch 3 is used to program the fixed light level the sensor will turn on to when occupancy is detected or the manual ON/RAISE button is used to turn on the lights. Set the desired light level using the ON/RAISE and OFF/LOWER buttons. Set switch 3 to the right (ON) then back to the left (OFF) to save the light level.

Switch 4 – Dual/Single Technology Detection Mode

Used to select which technologies are required to determine occupancy. When set to (OFF), detection by both the Passive Infrared AND Ultrasonic sensing technologies are required to turn the lights on. When set to (ON), detection by either Passive Infrared OR Ultrasonic sensing technologies can turn the lights on. Lights will turn off when BOTH technologies are no longer detecting motion.

Switch 5 – Sensitivity

Sets the sensor's initial Passive Infrared and Ultrasonic sensitivity level. Sensitivity can be set to either High or Low.

Switch Bank A	Function	<- OFF		ON ->	
1	Sensor Operation*	Manual ON/Automatic OFF		Automatic ON/Automatic OFF	
2	Last Level ON Recall	Enabled		Disabled	
3	Timer Mode	Adaptive		Fixed	
4	Adaptive Reset	Enable Adaptation		Restore Factory Default	
5	Relay Bypass	Normal Operation		Relay Override	
Switch Bank B	Function	<- OFF		ON ->	
1	Timer Select 0	->	<-	<-	->
2	Timer Select 1	<-	<-	->	->
	Time	4 Min	8 Min	16 Min	30 Min
3	Program Occupancy Light Level	Enabled		Disabled	
4	Sensor Detection Mode	PIR and Ultrasonic		PIR or Ultrasonic	
5	Sensitivity	High		Low	

*Note: Switch 1 has no function on vacancy only models (Cat. No. Suffix "-M")

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