

WIRELESS PHASE DIMMING LOADCONTROLLER SWITCH

INSTALLATION & OPERATION INSTRUCTIONS

CATALOG NUMBERS	DESCRIPTIONS
OCS-874-ELV	WIRELESS PHASE DIMMER & SWITCH -120V - REVERSE PHASE (ELV) OR FORWARD PHASE

* XX = color (WH, IV, LA, GY, BK, RD)

OVERVIEW

The Cadenc wireless phase dimming load controller links to remote occupancy sensors, photocells, and companion switches without low voltage wiring in order to provide both manual and automatic lighting control. With no minimum load requirements, this dimmer is perfect for even the smallest lighting zone. Additionally, at less than one inch deep, the unit is significantly shallower than typical dimmers. This results in less crowded wall boxes and quicker installation. All Cadence products are proudly made in the USA.

FEATURES

ELECTRICAL FEATURES

- Dims LED, CFL, ELV, & Incandescent Lighting Loads
- Selectable Reverse (default) and Forward Phase Dimming in Same Unit
- No Minimum Load Ratings - Relay Based Switching (i.e. non-Triac)
- 3-Way+ Dimming when Wirelessly Linked with Remote Dimming Stations
- Overload Protection Monitors & Protects Unit from Overheating

PHYSICAL FEATURES

- Enclosure is 25-40% Shallower than Other Wall Dimmers (< 1" Depth into Wallbo
- Modern Look and Individual Easy-Tap Buttons for On, Off, Raise, & Lower
- Matches Styling of other Cadence Wall Devices
- Self-Grounding Mounting Strap
- Blue Locator LED when Lights are Off

OPERATIONAL FEATURES

- Links in Seconds with Wireless Sensors & Remote Wall Stations
- Configurable Dimming Parameters including High/Low Trims, & Turn on Levels
- Settings are Adjustable without Removing Cover Plate
- Unit Retains Level Setting after Power Outage
- Links with up to 30 Wireless Device

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE

120VAC, Single Phase, 50/60 Hz

MAX LOAD RATINGS

In Reverse Phase Mode (default)

375W LED / ELV

375W Incandescent/Halogen

In Forward Phase Mode (optional)

150W CFL / LED

Consult factory for MLV rating

MIN LOAD RATINGS: None

LOAD TYPES

LED Driver/Lamps

CFL, Electronic/Magnetic Ballasts

(Fluorescent)

Electronic Low Voltage (-ELV model)

Tungsten (Incandescent)

Halogen

MLV (consult factory)

ESD IMMUNITY

Tested to withstand electrostatic discharge without damage or memory loss.

SURGE IMMUNITY

Tested to withstand surge voltages without damage or loss of operation.

NON-VOLATILE MEMORY

Saves all settings even if power is disrupted.

PHYSICAL

SIZE

2.74"H x 1.68"W x 1.39"D

(6.96 x 4.27 x 3.53 cm)

<1" Wallbox Mounting Depth

WEIGHT

4.5 oz

MOUNTING

Single Gang Switch Box

LED STATUS INDICATOR

Bi-color White & Blue

WIRELESS

RANGE

80' line of site w/o obstruction (walls)
40' with obstruction (walls/floors)

FREQUENCY

915 MHz ISM Band

WIRELESS LINKING

Simple 3 sec. Push Button Process

SECURITY

All Wireless Data is Encrypted

ENVIRONMENTAL

OPERATING TEMP

32°F to 86°F (0°C to 30°C)
(for full load operation)

RELATIVE HUMIDITY

0-95% Non-Condensing
Indoor Use Only

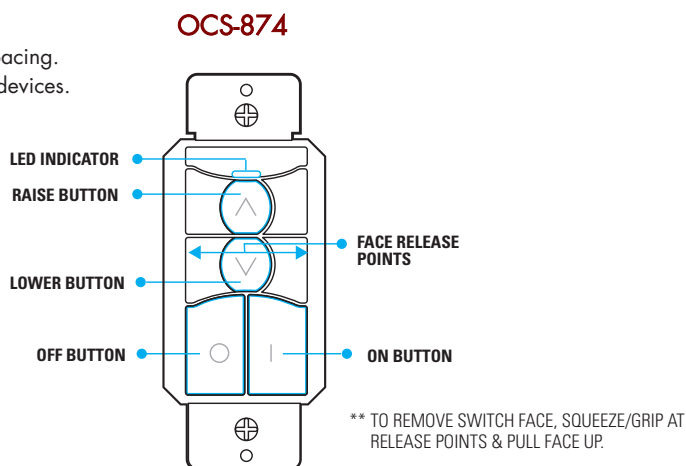
CODE COMPLIANCE

These load controllers can be used to meet ASHRAE 90.1, IECC, & Title 24 energy code requirements.



INSTALLATION

- Designed to mount in 1-gang wall box with 3.28" hole spacing.
- Units can also share multiple gang wall boxes with other devices.
- Unit face is field removable in order to change colors.



APPLICATIONS

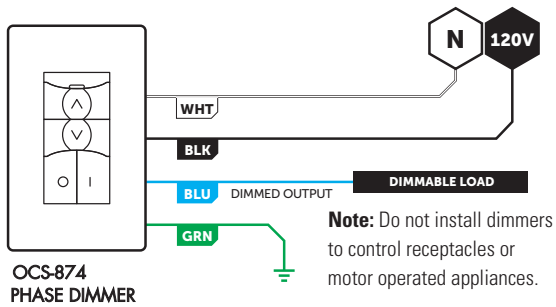
COMPATIBLE WIRELESS DEVICES

The chart below lists the devices that can be used in a Cadence wireless application. Note that sensors, photocells, and remote switch devices are transmit only devices and therefore must be linked to a load controller for switching of lighting.

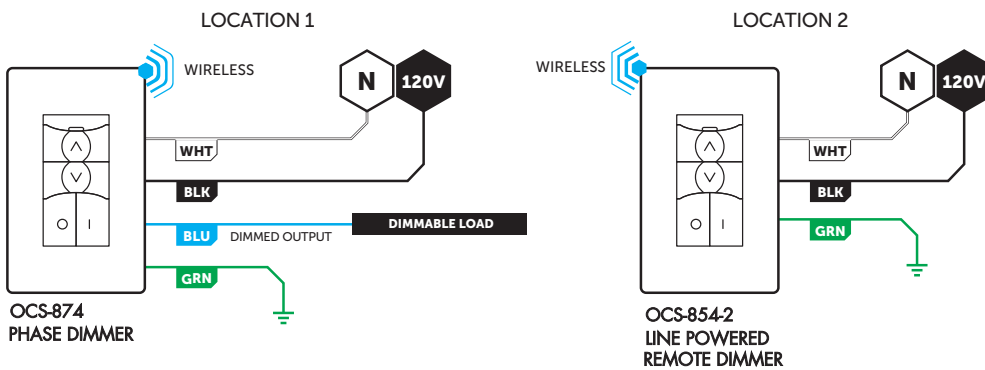
MODEL #	DESCRIPTION	WIRELESS TYPE	POWER TYPE
OCS-201-B	Small Motion 360° Sensor, PIR (Dual Tech model)	Transmit	Battery
OCS211-B	Small Motion 360° Sensor, PIR w/ Integrated Daylight Harvesting Photocell	Transmit	Battery
OCS-401-B (OCS-421-B)	Wide View Sensor, PIR (Dual Tech model)	Transmit	Battery
OCS-402-B	Long Range Hallway Sensor, PIR	Transmit	Battery
OCS-250-B	Daylight Harvesting & On/Off Photocell	Transmit	Battery
OCS-851-XX	Wall Switch Load Controller, No Neutral Required, <XX = color>	Transmit & Receive	120-277 VAC
OCS-852-B-XX	Remote Switch (On/Off), <XX = color>	Transmit	Battery
OCS-852-2-XX	Remote Line Powered Switch (On/Off), <XX= color>	Transmit	120-277 VAC
OCS-854-B-XX	Remote Dimming Switch (On/Off, Raise/Lower), <XX= color>	Transmit	Battery
OCS-854-2-XX	Remote Line Powered Dimming Switch (On/Off, Raise/Lower), <XX = color>	Transmit	120-277 VAC
OCS874-ELV-XX	Phase Dimming Load Controller - Reverse (default) or Forward Ph, <XX = color>	Transmit & Receive	120 VAC
OCS-950	Power Pack Load Controller, 20A	Transmit & Receive	120/277 VAC
OCS-951-D1	Fixture Controller, 1A@, 0-10V Dimming	Transmit & Receive	120-277 VAC
OCS-950-D2 (OCS-950-D1)	Power Pack Load Controller, 20A, 0-10V Class 2 Dimming (Class 1 model)	Transmit & Receive	120/277 VAC
OCS-950-AX	Hybrid Wireless/Wired Power Pack Load Controller, 20A	Transmit & Receive	120/277 VAC
OCS-950-AX-D2	Hybrid Wireless/Wired Power Pack Load Controller, 20A, 0-10V Dimming	Transmit & Receive	120/277 VAC
OCS-950-AX	Hybrid Wireless/Wired Power Pack Load Controller, 20A	Transmit & Receive	120/277 VAC

WIRING

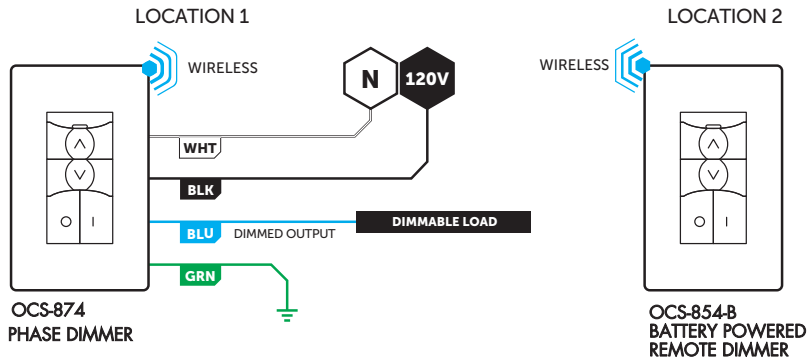
DIMMING FROM A SINGLE LOCATION



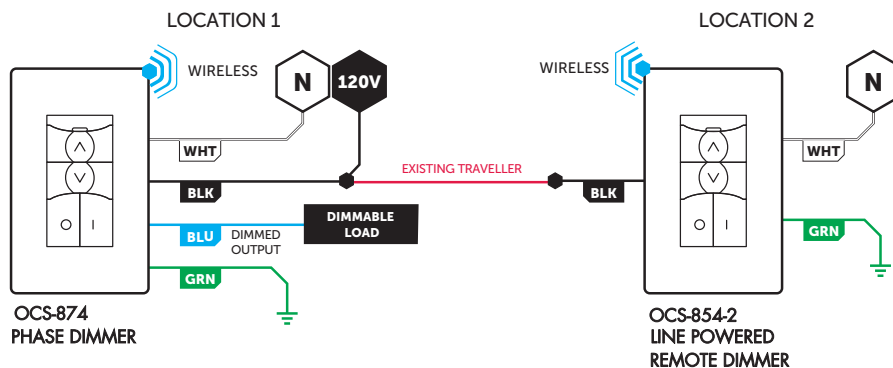
DIMMING FROM MULTIPLE LOCATIONS (e.g. 3-way) - OPTION 1



DIMMING FROM MULTIPLE LOCATIONS (e.g. 3-way) - OPTION 2



DIMMING FROM MULTIPLE LOCATIONS (e.g. 3-way) - OPTION 3



TESTING & TROUBLESHOOTING

LED BLINKOUT BEHAVIORS

LED BEHAVIOR	DESCRIPTION	NOTES/REMEDY
Continuous WHITE blinking "heartbeat"	Normal operation	
Repeating double BLUE flashes with 1 second pauses between sets	Power supply is overloaded.	1. Check for miswiring causing a short on the red low voltage wire. 2. Remove low voltage load from the red wire (i.e. connected sensors, secondary relay packs, or switches) until the BLUE double flash stops.
Repeating sets of 5 Blue flashes	Power present on both relay wires	Check wiring going to the blue relay wires on the power pack. Specifically, ensure there is not line power present on both wires when power pack is disconnected.
Alternating WHITE / BLUE flashing	Wireless Learn Mode (Pairing)	To exit learn mode, press the button one time and release. The LED should return to continuous WHITE "heartbeat".
Alternating WHITE / BLUE flashing with periodic sets of WHITE blinks	Wireless Learn Mode w' Linked Device Count	The number of periodic WHITE blinks reflects the number of linked devices. To exit learn mode, press the button one time and release. The LED should return to continuous WHITE "heartbeat".
Repeating sets of 4 Blue flashes, with 1 second pause between sets	Linked sensors have stopped communicating	Check sensor battery and install location.
Double BLUE flash every 15 seconds	Photocell is overriding lights OFF	Normal operation during times of high daylight.
Steady BLUE flash (no periodic pauses)	Photocell is transitioning lights ON or OFF	Normal operation when photocell operation is enabled.
Repeating sets of 8 Blue flashes, with 1 second pause between sets	No photocell messages are being received	Run auto-setpoint on paired photocell.

OVERLOAD PROTECTION

If unit exceeds its thermal specification due to load size, it will drop down to low trim (if currently at or above 40% dim level). If unit continues to overheat even at low level, it will switch off. See Dimming Operation Notes section for more information.

WIRELESS LINKING (PAIRING)

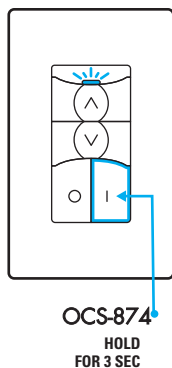
Linking a phase dimming load controller (i.e. dimmer) with an occupancy sensor, photocell, power pack, dimmer, or another wall switch controller is quickly done via the following procedure:

- Step 1.** Enter learn mode by holding down the phase dimmer's On button for 3 seconds until the LED starts alternating blue and white, then release.
- Step 2.** At the sensor (or other remote device), hold down the programming button for 3 seconds until the LED starts alternating blue and white. Releasing will link the sensor with the controller in learn mode (see note 1 below). The lighting load being controlled will also be toggled off/on as a visual indication of success.
- Step 3.** Repeat step 2 to link another sensor or device.
- Step 4.** When all devices have been linked, exit learn mode on the phase dimmer by pressing the On button 1 time. Learn mode will also be automatically closed after 15 minutes of no new devices being linked.

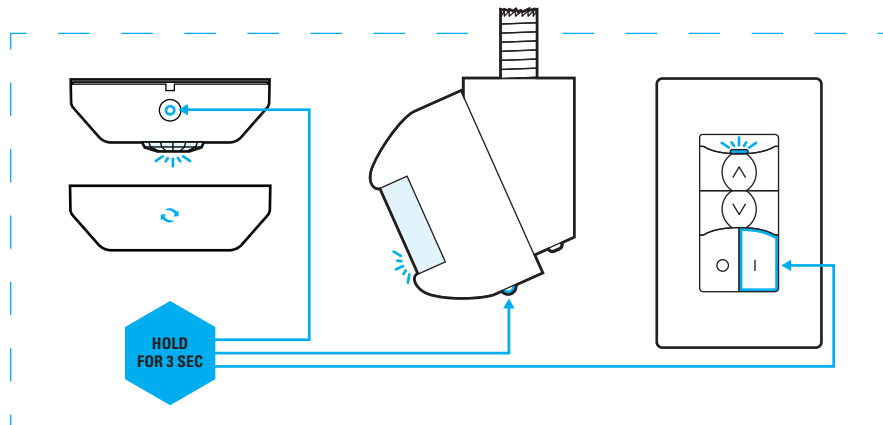
Note 1: Once a device(s) is linked, the alternating LED colors on the dimmer will periodically pause and blink out total number of linked devices. There will be no blinks during the pause until after the first device is linked.

Note 2: Linking two phase dimming controllers (or one dimming controller and one wireless power pack) can be done by putting each device in learn mode first (i.e. Step 1 above) before continuing to Step 2 for each device. After Step 2 has been completed for each device, continue to Step 3 for each device.

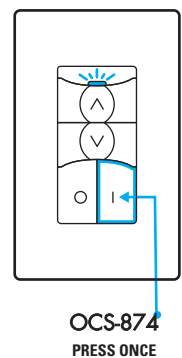
STEP 1 PHASE DIMMER



STEP 2 & STEP 3 WIRELESS SENSORS & REMOTE SWITCHES



STEP 4 PHASE DIMMER



OPERATION NOTES

DIMMING OPERATION

- Rapid dimming adjustments can be made by holding the UP or DOWN buttons.
- Small dimming adjustments are made by tapping the UP or DOWN buttons.
- The intensity of the white LED will change accordingly as dimming is adjusted.
- When the level reaches the high or low trim level the white LED will begin to blink.
- There are always 20 steps of dim level adjustment from high trim to low trim (or reverse). Rapid button presses may result in misses.
 - For more responsive level adjustments when lighting is at the low end, it is recommended to use the square logarithmic dimming curve.
- The square logarithmic dimming curve should not be used with an LED driver that has a preprogrammed logarithmic dimming response.
- If unit reaches an elevated temperature due to overloading it will either drop to 40% dimming level or open the relay in order to reduce the temperature. If auto-dimming does not Reduce the temperature within 5 minutes, the unit's relay will be opened. If unit is already at a dimmed state less than 40% when elevated temperature is reached, the unit will open its relay without further dimming first. The relay will remain open for at least one minute or until the unit's temperature has dropped to an acceptable operating level. If auto-dimming or turning off is observed, the dimming load should be reduced.
- For areas such as stairwells, the **OCS-874** unit can be used to achieve **Partial Off** operation where lighting is at the full bright level when occupied and dropped to the 50% (level is configurable) during unoccupied periods.
- **Partial On** operation can be achieved by the **OCS-874** unit. In this configuration 0-10V lighting is turned on to a configurable **Partial On Level** when triggered from an occupancy sensor or switch. Lighting can then be adjusted to any level via a wirelessly linked OCS-854-x remote dimmer. Alternatively, if the ON button is pushed on a wirelessly linked OCS-852-x or OCS-854-x remote switch, lighting will be stepped up to 100% (level is user configurable). Lighting can be turned off manually via an OFF switch press on either the OCS-852-x, OCS-854-x wireless remote switch (or single button push on an OCS-851 switch controller).

GENERAL WIRELESS SENSOR OPERATION

- Wireless sensors periodically transmit their PIR and/or acoustic (if equipped) occupancy status.
- Referred to as the sensor's "heartbeat", this period is optimized to conserve battery life.
- If a sensor transmitted "unoccupied" at its last heartbeat, any new PIR detection event will be transmitted immediately.
- Using the information received from linked sensors, wirelessly linked power pack load controllers switch lighting accordingly.
- The phase dimming controller has a master time delay that is initially set only when a PIR occupancy transmission is received from a linked sensor. The time delay will then be reset every time a sensor reports any occupancy (either PIR or acoustic). Lights will be switched off once all linked sensors have continuously reported unoccupied for the duration of the time delay.
- To prevent lights from staying on indefinitely from just acoustic events, after ~30 minutes the phase dimming controller will stop considering acoustic events from all linked sensors until after a PIR event is received again.
- As an added safety measure after lights are switched off, acoustic detection remains enabled for 15 seconds to enable voice reactivation of lights.
- If a wireless phase dimming controller does not receive any heartbeat transmissions from a linked sensor for 10 minutes, it will blink out an error code (4 blue blinks, followed by a pause) and consider itself occupied (so as to override the lights on). If more than one sensor is linked, the sensor heartbeats from all sensors must have stopped for the error warning to begin blinking.

GENERAL WIRELESS PHOTOCELL OPERATION

- The **Ambient Setpoint** (ON Button Function #6) and **Photocell Operating Mode** (ON Button Function #5) are settings stored within the phase dimming controller. For all photocell applications (e.g. daylight harvesting), the phase dimming controller receives the light level readings being transmitted every 15 seconds by wirelessly linked photocells. The controller will then dim, turn off, or turn on connected lighting in order to maximize energy savings while maintaining desired minimum light level.
- The setpoint value initially is established by the running the Auto-Setpoint calibration procedure that is built into the wireless photocell. Once initially determined, the setpoint can be changed at the phase dimming controller by selecting from a list of values.
- The wireless phase dimming controller will only listen to a single wireless photocell sensor. If more than one is wirelessly linked, the unit that last ran the auto-setpoint calibration procedure will be used.
- The photocell control algorithm compensates for the contribution of the controlled lighting to the overall light level of the space. This prevents lights from cycling back on shortly after they are switched off by the photocell operation.
- When the unit's **Photocell Operating Mode** (ON Button Function #5) is set to Daylight Harvesting to Off, On/Off Operation, or Inhibit Operation, there is a 45 second transition time after the ambient light level falls below the setpoint to when the connected lighting is switched on. During this transition time, the LED on the power pack controller will be slowly blinking blue.
- When the unit's **Photocell Operating Mode** (ON Button Function #5) is set to Daylight Harvesting to Off or On/Off Operation, there is a 5 minute transition time after the ambient light level surpasses the setpoint to when the connected lighting is switched off. During this transition time, the LED on the power pack controller will be slowly blinking blue.
- Whenever lights are being held off due to the photocell, the blue LED will double blink every 15 seconds.
- Dimming from high trim to low trim (or in reverse) due to daylight harvesting requires ~1.5 minutes.

OPERATION NOTES (CONT.)

LEADER / FOLLOWER OPERATION & MULTI-ZONE DAYLIGHT HARVESTING

- Phase dimming controllers can be configured to directly “follow” the state and dim level of another wirelessly linked power pack, switch, or phase dimming controller (referred to as the “leader”). Leader/follower functionality is intended for applications where two controllers are intended to act together, but where only one (designated the leader) is within range of the wireless remote switch or sensor. The follower controller must still be within range of the leader controller.
- A power pack in follower mode does not listen to any other wireless devices except the leader to which it is paired. Therefore, all wireless devices in a zone must be in range of the leader.
- The “leader/follower” functionality of phase dimming controllers can also be used to accommodate **multi-zone daylight harvesting** applications. The leader would be wired to control the primary daylight zone that contains the daylight harvesting photocell, with one or more follower devices controlling the lights in secondary daylight zones (i.e. zones located further from the windows). The follower devices can then be configured to control the lights a percentage brighter than the leader.

CONFIGURATION SETTINGS

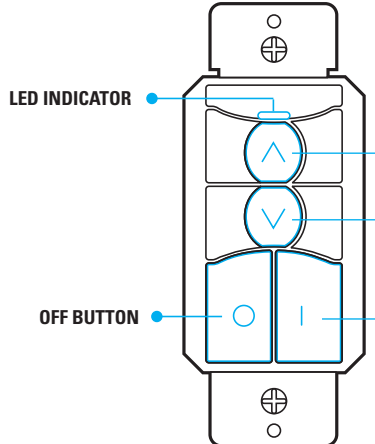
CONFIGURATION PROGRAMMING

- 1 From the lists of Configuration Functions below, note the Button Position and number (#) of the Function to be changed. For example, HIGH TRIM setting is the UP Button, #3.
- 2 Enter programming mode by pressing and holding the ON button for **6 seconds** until the LED begins flashing **blue only**, then release.
- 3 Press and release the chosen function's applicable button the number of times indicated in the tables below. For example, press the UP button 3 times for the HIGH TRIM setting.
- 4 The LED will flash back white the number of times equal to the current setting number as it appears in each function's detailed table of values. For example, the default HIGH TRIM is setting #2 (100%). Following a short pause, this blink back sequence will repeat.
- 5 Interrupt blink back by pressing the applicable button the number of times corresponding to the new setting #. For example, UP button 3 times (for 90%).
- 6 The LED will flash back the new setting number as confirmation.
- 7 To Save and Exit programming mode, press and hold the function's applicable button again until the LED changes to White, then release. The LED will then blink white twice as confirmation of success. For example after changing the HIGH TRIM setting hold the UP button until LED changes to White. Note: To Exit without saving during any step, wait until unit double flashes blue.

Note if the LED double flashes twice blue at any point, repeat the above procedure.

CONFIGURATION FUNCTIONS

All configuration settings for the wireless wall switch load controller are organized into several functions with values that can be accessed and changed by pressing the unit's buttons and observing the LED's feedback.



The diagram shows a vertical rectangular device with a central display area. At the top is a small circular LED indicator. Below it are two large circular buttons: the top one has an upward arrow (UP) and the bottom one has a downward arrow (DOWN). At the bottom is a small circular button labeled 'OFF'. The device has a textured, metallic appearance.

UP (RAISE) BUTTON FUNCTIONS

DIMMING

FUNCTION NAME	BUTTON USED	FUNCTION #
Turn On Level	Up	2
High Trim	Up	3
Fade On Time	Up	4
Dimming Curve	Up	5

DOWN (LOWER) BUTTON FUNCTIONS

DIMMING

FUNCTION NAME	BUTTON USED	FUNCTION #
Turn Off Scheme	Down	2
Low Trim	Down	3
Fade Off Time	Down	4
Manual Offset	Down	5

ON BUTTON FUNCTIONS

FUNCTION NAME	BUTTON USED	FUNCTION #
Time Delay	On	2
Operating Mode	On	3
FWD vs REV Phase	On	4
Daylight Harvesting / Photocell Mode	On	5
Ambient Setpoint	On	6
LED	On	7
Factory Reset	On	8
Leader/ Follower	On	9
Microphone	On	10

CONFIGURATION SETTINGS (CONT.)

FUNCTION #2 OCCUPANCY TIME DELAY

Unlike wired occupancy sensor systems, the time frame between when occupancy was detected last and connected lights turning off is a setting that is maintained in the load controller and not the sensor itself. This arrangement enables the sensors to conserve battery life. See additional notes below for more information on wireless sensor communications to a load controller.

SETTING #	DESCRIPTION
2	1 Min
3	5 Min
4	10 Min (default)
5	15 Min
6	20 Min
7	30 Min

NOTE: A 5-10 second time delay sensor test mode can be initiated from a sensor in order to test coverage. Test mode will expire after 10 minutes.

CHANGING THE OCCUPANCY TIME DELAY

1. Read through the above list and note the number of the desired setting (e.g. 4 = 10 minutes).
 2. Enter programming mode by pressing and holding the ON button for **6 seconds** until the LED begins flashing **blue only**, then release.
 3. Enter **Function #2: Occupancy Time Delay** by tapping and releasing the unit's ON pushbutton **2 times**.
 4. The LED will blink back white the number of times equal to the current setting (e.g., 4 times for 10 minutes). Following a short pause, this blink back sequence will repeat 5x before exiting. Interrupt blink back by pressing the ON button the number of times equal to the new desired setting (e.g. 5 = 15 minutes). The LED will blink back white the new setting number as confirmation
 5. To **Save** and **Exit** programming mode, press and hold the ON button until blue LED changes to white, then release. The LED will then blink white twice as confirmation of success.
- Note:** To Exit without saving during any step, release button and wait until the unit double flashes blue.

FUNCTION #3: OPERATIONAL MODES

Wireless phase dimming controllers have several sequence of operation choices.

SETTING #	MODE	DESCRIPTION
2	Automatic On Occupancy Mode (default)	Lights come on automatically when an occupancy signal is received from wirelessly linked sensors. The lights will turn on to the TURN ON / PARTIAL ON LEVEL as specified in UP Function #2. Lights will turn off automatically if the OCCUPANCY TIME DELAY expires prior to receiving another occupied signal from a sensor. Lights can also be switched off manually by pressing the unit's off button or the off button on a wirelessly linked switch.
3	Vacancy (Manual On) Mode	An On or Dim Up button press on the controller unit or a linked wireless switch is required to initially turn lights on. On dimming models the lights will turn on to the TURN ON / PARTIAL ON LEVEL as specified in UP Function #2. Lights will turn off automatically if the OCCUPANCY TIME DELAY (Function #2) expires prior to receiving another occupied signal from a sensor. Lights can also be switched off manually if the unit's Off button is pressed or if a off signal is received from a wirelessly linked switch.
4	Partial Off Occupancy Mode (Auto-On to 100% when Occupied / 50% Dim when Unoccupied)	Lights are on at full bright (HIGH TRIM LEVEL) when wirelessly linked sensors are signaling occupancy. When unoccupied, lights are dimmed to TURN ON / PARTIAL ON(OFF) LEVEL as specified in UP Function #2. Note the default value is changed to 50% when the OPERATIONAL MODE is switched to Partial Off. Lights can be manually dropped to TURN ON / PARTIAL ON(OFF) LEVEL if the unit's Off button is pressed or an Off signal is received from a linked wireless switch.
5	Automatic On (Disabled Off Switch)	Lights come on automatically when an occupancy signal is received from wirelessly linked sensors. Lights will turn on to the TURN ON / PARTIAL ON LEVEL as specified in UP Function #2. Lights will turn off automatically if the OCCUPANCY TIME DELAY expires prior to receiving another occupied signal from a sensor. Lights <u>cannot</u> be switched off manually from the unit's Off button or any wirelessly linked switch..

CHANGING THE OPERATIONAL MODE

1. Read through the above list and note the number of the desired setting (e.g. 3 = Vacancy Mode).
 2. Enter programming mode by pressing and holding the ON button for at least **6 seconds** until the LED begins flashing **blue only**, then release.
 3. Enter **Function #3: Operational Modes** by tapping and releasing the unit's ON button **3 times**.
 4. The LED will blink back white the number of times equal to the current setting (e.g., 2 times for Automatic On Occupancy Mode). Following a short pause, this blink back sequence will repeat 5x before exiting. Interrupt blink back by pressing the ON button the number of times equal to the new desired setting (e.g. 3 = Vacancy Mode). The LED will blink back white the new setting number as confirmation
 5. To **Save** and **Exit** programming mode, press and hold the ON button until blue LED changes to white, then release. The LED will then blink white twice as confirmation of success.
- Note:** To Exit without saving during any step, release button and wait until the unit double flashes blue.

ADDITIONAL NOTES ON OPERATIONAL MODES

- When running in the default operating mode (**Setting 2 - Automatic On Occupancy Mode**), if the lights are manually switched off when there are still occupants in a space (to show a presentation for example), the Automatic On operation will be disabled until the sensor time delay expires.
- In applications with wirelessly linked sensors, if the switch is pressed but no occupancy signal is ever received, the lights will come on for 1 minute and then shut off.
- When in **Vacancy (Manual On) Mode** (Setting #3), there is a 15 second "grace" period after the sensor times out when the sensor will switch lights back on automatically if occupancy is detected. After 15 seconds the sensor will revert to vacancy (manual on) operation.

CONFIGURATION SETTINGS (CONT.)

FUNCTION #4 FORWARD / REVERSE PHASE

This function enables changing between reverse and forward phase dimming.

SETTING #	VALUES	NOTES
2	Forward Phase	
3	Reverse Phase (ELV)	Default

FUNCTION #5 - DAYLIGHT HARVESTING / PHOTOCELL OPERATING MODE

This function defines how the power pack controls the lights when it receives ambient light values from a linked photocell that are above the **SETPOINT** value. To change setting, follow **Configuration Programming** procedure on page 6.

SETTING #	VALUES	NOTES
2	Disabled (default)	Default setting on all OCS-874 series controllers. Running auto-setpoint on a linked photocell or sensor will change mode to setting to #3 or #5.
3	On/Off Operation	Lights will turn off with high daylight.
4	Inhibit Only Operation	During high daylight, lights will be prevented from coming on automatically when occupancy is detected. However, lights will not never be switched off due to high daylight.
5	Daylight Harvesting to Low Trim (i.e. Auto Dimming)	Automatically enabled on a OCS-874 once auto-setpoint configuration is run from a linked wireless photocell. As ambient light level rises, the controlled lights will be dimmed down to a minimum of the LOW TRIM value. Lights will not be turned off from high daylight.
6	Daylight Harvesting to Off	Lights will dim to low trim and then turn off from high daylight.

FUNCTION #6 - AMBIENT SETPOINT

The minimum overall light level that is to be maintained in a space is referred to as the "setpoint". Note, the **Auto-Setpoint Calibration** procedure must initially be run from a linked wireless photocell for this function to be enabled. Once run, the value calculated during the auto-setpoint calibration will be blinked back upon entering this function (i.e. after doing **STEPS 2-3** in the **Configuration Programming** procedure on page 6. The blink back is done in two alternating digits as follows:

BLUE LED BLINKS = 10' digit (1-9 blinks or rapid blink for 0)

WHITE LED BLINKS = 1's digit (1-9 blinks or rapid blink for 0)

To change the setpoint value, follow **STEPS 1-7** in the **Configuration Programming** procedure on page 6 and using the below value table.

SETTING #	VALUES
2	2.5 fc
3	5.0 fc
4	10.0 fc
5	15.0 fc
6	25.0 fc
7	35.0 fc
8	50.0 fc
9	+10 %
10	- 10 %

FUNCTION #7: LED BEHAVIOR

When the phase dimmer controller has switched the lights off, the unit's LED will be solid blue as a locator by default. Additionally, when the lights are on, the White LED will change intensities as the unit is dimmed. To disable this LED functionality, follow **Configuration Programming** procedure on page 6.

SETTING #	WHITE LED FUNCTION	BLUE LED FUNCTION
2	Intensity shows relative dim level	Provides location aid when controlled lights are off.
3	Disabled	Provides location aid when controlled lights are off.
4	Intensity show relative dim level	Disabled
5	Disabled	Disabled

CONFIGURATION SETTINGS (CONT.)

FUNCTION #8: RESTORE FACTORY DEFAULTS / FORGET LINKED DEVICES

To return a wireless phase dimmer to its original factory default settings or to clear the unit's list of linked wireless devices the following commands can be executed.

SETTING #	DESCRIPTION
3	Restore Factory Defaults
4	Restore Factory Defaults and Forget all Linked Devices
5	Enter Forget Mode (opposite of Learn Mode)
6	Forget All Linked Devices
7	Send a "Forget Me" Message

Note: If factory defaults are restored, auto-setpoint calibration will need to be reinitiated from any linked photocell/daylight harvesting sensors.

ENTERING A RESTORE FACTORY DEFAULTS OR FORGET LINKED DEVICES COMMAND

1. Read through the above list and note the number of the desired command.
2. Enter programming mode by pressing and holding the On button for at least **6 seconds** until the LED begins flashing **blue only**, then release.
3. Press and release the unit's On button **8 times**, then wait 2 seconds. The white LED will blink back 2 times, pause, and repeat 3x before exiting.
4. Interrupt the blink back and press the On button the number times equal to the desired command (e.g. 6 times to Forget all Linked Devices).
5. The LED will flash back the command number as confirmation and will be executed after three confirmations. After the third confirmation sequence, a successful save is indicated by a two sets of rapid white flashes. If the blue LED rapid flashes twice, save was unsuccessful and process should be started over.

FUNCTION #9 - LEADER / FOLLOWER (MULTI-ZONE OFFSET)

When a wireless phase dimmer controller is configured to be a "follower", it will track the behavior of the "leader" controller (i.e. another phase dimmer or power pack) to which it is linked. This is useful when trying to extend the wireless range in a controlled space. In multi-zone daylight harvesting applications, the follower controller can also be configured to keep lights a fixed amount brighter than the leader controller. Wireless follower controllers must be first wirelessly linked to a leader controller (see Note 2 in the Wireless Linking (Pairing) instructions on page 4). Once a follower controller is linked to a leader controller, it can also act as a leader to another follower using the same linking process.

To change setting, follow **Configuration Programming** procedure on page 6.

SETTING #	VALUES	NOTES
2	Disabled (default)	
3	Leader	
4	Follower	
5	Follower - 10% Brighter	
6	Follower - 20% Brighter	
7	Follower - 30% Brighter	Exact light output % at each voltage level depends on driver/ballast and luminaire.
8	Follower - 40% Brighter	
9	Follower - 50% Brighter	

DIMMING CONFIGURATION

To change any of the settings below, follow the **Configuration Programming** procedure on page 6.

FUNCTION #2 - TURN ON / PARTIAL ON(OFF) LEVEL

UP BUTTON

The level the dimmer is set to upon initially turning on when in an Automatic On or Vacancy Operating Mode. Note, changes to this setting will not be observed until the lights have cycled off and back on one time. When in Partial Off Operating Mode, this setting is the level to which the dimmer drops lighting when an unoccupied or an off switch signal is received.

SETTING #	VALUES	NOTES
2	100%	Invalid if Operational Mode set to Partial Off. Light output at each % depends on luminaire.
3	Last User Level (default)	
4	~30%	
5	~40%	
6	~50%	
7	~60%	
8	~70%	
9	~80%	

FUNCTION #3 - HIGH TRIM

UP BUTTON

The maximum lighting level to which the dimmer will allow.

SETTING #	VALUES	NOTES
2	~100% (default)	Light output at at each % depends on luminaire.
3	~90%	
4	~80%	IMPORTANT NOTICE - After changing the high trim value, Auto-Setpoint calibration should be re-run at the linked wireless daylight sensor.
5	~70%	
6	~60%	
7	~50%	

FUNCTION #4 - FADE OFF TIME

UP BUTTON

The time it takes for the dimmer to reach its final level when turning off. This setting is only active when the unit's **Turn Off Scheme** is set to one of the Fade settings.

SETTING #	VALUES
2	0.75 Sec
3	1.5 Sec (default)
4	3 Sec
5	5 Sec
6	15 Sec

FUNCTION #5 MANUAL DIMMING RESPONSE CURVE

UP BUTTON

SETTING #	VALUES	NOTES
2	Linear	Default for all models
4	Square Log	

FUNCTION #2 - TURN OFF SCHEME

DOWN BUTTON

The dimming and relay behavior when an unoccupied signal or an off switch press is received.

SETTING #	VALUES	NOTES
2	Drop to Off (default)	Dimming output drops to low trim and relay opens
3	Fade to Off	Dimming output fades to low trim setting and relay opens
4	Fade to Minimum	Dimming output fades to the unit's minimum level. Relay remains closed.
5	Fade to Low Trim	Dimming output fades down to low trim setting. Relay remains closed.
6	Drop to Low Trim	Dimming output drops to the unit's low trim level. Relay remains closed.
7	Drop to Minimum	Dimming output drops to unit's minimum level. Relay remains closed.

FUNCTION #3 - LOW TRIM

DOWN BUTTON

The minimum level to which the dimmer can lower lighting.

SETTING #	VALUES	NOTES
2	Minimum (default)	Light output at at each % depends on luminaire.
3	~10%	
4	~20%	IMPORTANT NOTICE - After changing the low trim value, Auto-Setpoint calibration should be re-run at the linked wireless daylight sensor.
5	~30%	
6	~40%	
7	~50%	

FUNCTION #4 - FADE ON TIME

DOWN BUTTON

The time it takes for the dimmer to reach its final level when turning on.

SETTING #	VALUES
2	0.75 Sec
3	1.5 Sec (default)
4	3 Sec
5	5 Sec
6	15 Sec

DIMMING CONFIGURATION (CONT.)

FUNCTION #5 - MANUAL DIMMING OVERRIDE

DOWN BUTTON

The amount of time that user is allowed to raise the dim level of a controller that is also linked to a daylight harvesting photocell. Lowering the dim level is always allowed. To change setting follow **Configuration Programming** procedure on page 6.

SETTING #	VALUES	NOTES
2	Disabled (default)	Dimming above the daylight harvesting level is not allowed.
3	Indefinitely	Dimming above the daylight harvesting level is always allowed.
4	1 Hour	Dimming above the daylight harvesting levels is allowed for the setting's time period after which the level will automatically return to the daylight harvesting level. Manual dimming overrides are also cancelled when ever lights switch off from occupancy sensors timing out.
5	2 Hour	
6	4 Hour	
7	8 Hour	

FCC INFORMATION (FCC ID: 2AVRY-SWX0001)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation

Changes and Modifications not expressly approved by BLP Technologies can void your authority to operate this equipment under Federal Communications Commission's rules.

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

ISED CANADA INFORMATION (IC: 26012-SWX0001)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
3. Afin de se conformer aux exigences d'exposition RF FCC / ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps