

OVERVIEW

Sensor Switch's line of wireless occupancy sensors provide both Passive Infrared (PIR) and PIR/Microphonics™ Dual Technology detection options. These battery operated sensors utilize RDTTM Wireless technology. They are designed to work with the **SPODMR WR** series wall switch/load controller or other RDTTM Wireless control devices.

The **SPODMR WR** is a stylish, easy to install, and simple to use wall switch/load controller for use with synched RDTTM Wireless occupancy sensors, kinetic rocker switches, or plug-load controllers. Designed to replace a standard wall toggle switch, the **SPODMR WR** wires to hot, load, neutral, and ground. Once wired, a few button pushes will pair the switch to other RDTTM Wireless devices. For bi-level switching applications, two switches may be linked to one sensor. 3-way switching of the same load from multiple locations can also be quickly implemented.

FEATURES

CM (PDT) xx WR:

- 100% wireless operation
- RDTTM Wireless (902 MHz) compliant
- 10 Year battery life (at defaults)
- 100% digital PIR detection
- Optional small motion 360° or large motion 360° coverage pattern
- Optional dual technology with PIR / Microphonics™ detection
- Push-button programmable
- Adjustable time delays
- No field calibration or sensitivity adjustments required
- Green LED Indicator
- Simple push-button pairing with compatible devices

SPODMR WR:

- Compatible w/ LEDs, electronic & magnetic ballasts, CFLs, & incandescents
- Line power and load wires are interchangeable - impossible to wire backwards
- Neutral wire required - no current leakage to load
- Simple push-button programming & pairing
- Adjustable time delays
- Auto-On and/or Manual On (Vacancy) operation
- Matching wallplate included
- 2 Green LED indicators
- Configurable for multiway (e.g. 3-way) or bi-level applications

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



Sensor Switch™

Wireless Sensor & Switch



ORDERING INFORMATION

Sensors				Example: CM PDT 9 WR
Series	Coverage	Wireless Tech		
CM Passive Infrared (PIR)	9 Small Motion 360°	WR	RDTTM Wireless	
CM PDT Dual Technology	10 Large Motion 360°			

Wall Switch				Example: SPODMR WR WH
Series	Operating Mode	Color		
SPODMR WR Wireless Wall Switch	[blank] Auto-On (default) SA Manual-On (default)	WH White	GY Gray BK Black	
		IV Ivory	AL Lt.Almond	

Kits				Example: SPODMR WR WH K1
Series	Color	Kit Option		
SPODMR WR Wireless Wall Switch	WH White GY Gray BK Black	K1 Incl. CM 9 WR	K3 Incl. CM PDT 9 WR	
	IV Ivory AL Lt.Almond	K2 Incl. CM 10 WR	K4 Incl. CM PDT 10 WR	

SPECIFICATIONS

CM (PDT) xx WR:

Size:	4.5" Diameter (11.56 cm) 2.39" Deep (6.07 cm)
Weight:	6 oz
Mounting:	Ceiling Surface, 3.5" Octagon Box, Single Gang Handy Box
Color:	White
Wireless frequency:	902 MHz (RDT™)
Expected Battery Life:	~10 years (at defaults)
Battery Type:	AA Lithium (1.5V)

SPODMR WR:

Size:	2.74"H x 1.68"W x 1.63"D (6.96 cm x 4.27 cm x 4.14 cm) (not including ground strap)
Weight:	5 oz
Mounting:	Single gang switch box
Color:	White, Ivory, Gray, Lt. Almond, Black
Maximum Load:	800 W @ 120 VAC, 1200 W @ 277 VAC, (Fluorescent/Tungsten/LED), 1A @ 24 VAC/VDC
Minimum Load:	None
Motor Load:	1/4 HP
Frequency:	50/60Hz
Wireless Frequency:	902 MHz (RDT™)
Wireless Range Guidelines:	Line of Sight: >100 ft (31 m); e.g. corridor Plasterboard / Dry Wood: 98 ft (30 m), max 5 walls Concrete: 32 ft (10 m), max 1 wall/ceiling
Max Paired Devices:	20

Note: Using replacement batteries with a capacity of < 3000 mAh will result in shorter battery life.

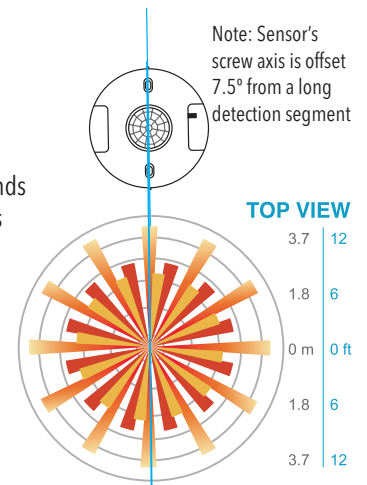
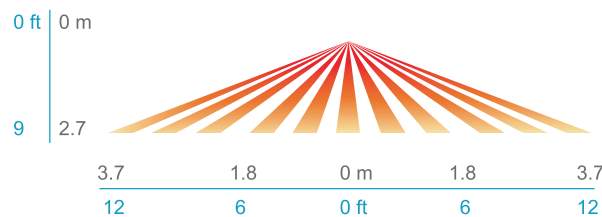
ROHS Compliant

COVERAGE PATTERN

SMALL MOTION 360° (model #s: CM 9 WR / CM PDT 9 WR)

- Small motion (e.g. hand movements) and large motion detection in a 360° coverage pattern around sensor
- Provides 12 ft (3.66 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage
- Units with -PDT (Passive Dual Technology) option (also called Microphonics™) provide overlapping detection of sounds from human activity over the complete PIR coverage area. Advanced filtering is utilized to prevent nonoccupant noises from keeping the lights on.

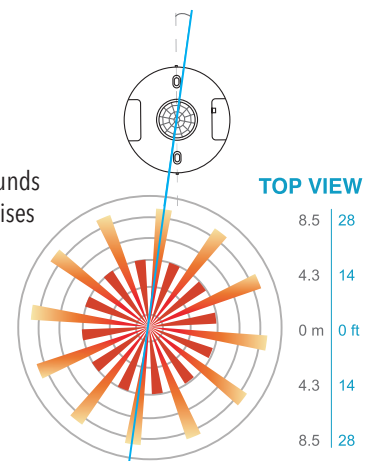
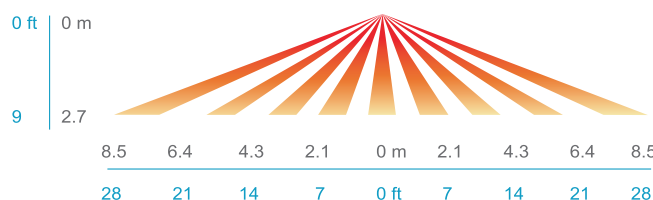
SIDE VIEW



LARGE MOTION 360° (model #s: CM 10 WR / CM PDT 10 WR)

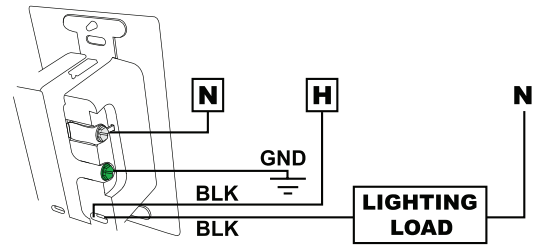
- Large motion (e.g. walking) detection in a 360° coverage pattern around sensor
- Provides 24 ft (7.32 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Units with -PDT (Passive Dual Technology) option (also called Microphonics™) provide overlapping detection of sounds from human activity over the complete PIR coverage area. Advanced filtering is utilized to prevent nonoccupant noises from keeping the lights on.

SIDE VIEW



WIRING AND INSTALLATION OF SWITCH

1. Turn off power to switch box at the circuit breaker.
2. Connect Ground wire to the GREEN screw.
3. Connect Neutral wire to the SILVER screw.
4. Connect one BLACK wire to Line power. Use a wire nut to secure connection.
5. Connect second BLACK wire to Load. Use wire nut to secure connection.
6. Affix switch and cover to wall using provided screws.
7. Turn power back on to switch box.

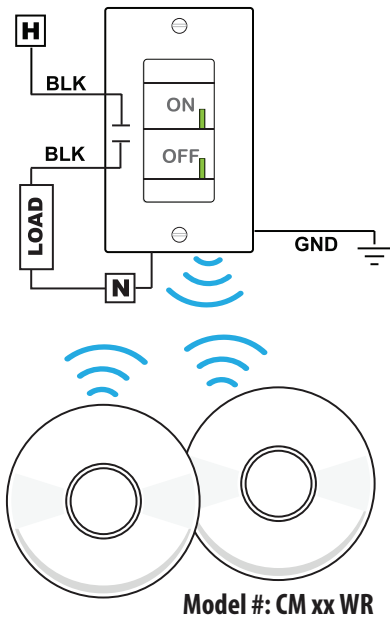


EXAMPLE APPLICATION DIAGRAMS

Note: All devices must be RDTM Wireless compliant

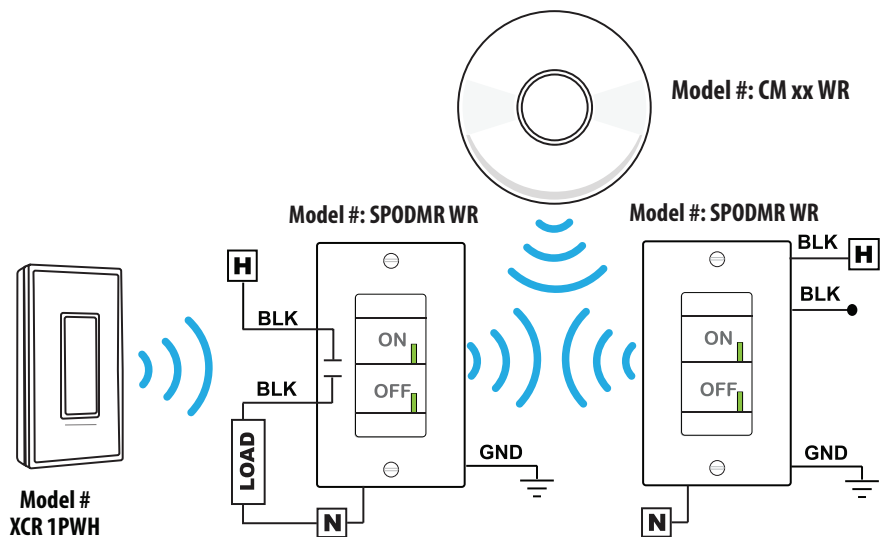
SINGLE-LEVEL CONTROL:

Model #: SPODMR WR



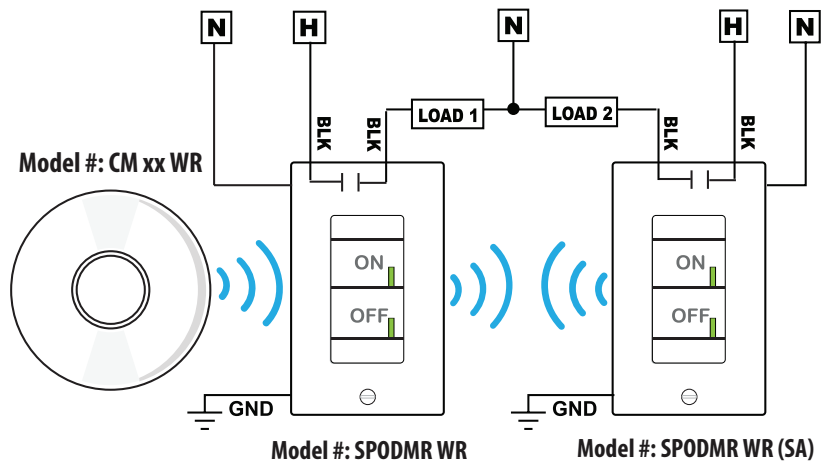
MULTIWAY (3-WAY) CONFIGURATION:

For 3-way applications using two SPODMR WR switches, each switch must be individually paired with the other switch and all sensors. For example, put the first SPODMR WR in Learn mode and pair the other SPODMR WR switch and all sensors. When complete, put the second SPODMR WR switch in Learn mode and pair the first SPODMR WR and all sensors. Pairing any one SPODMR WR switch with a wireless rocker switch (model #XCR 1PWH) will also provide 3-way functionality.

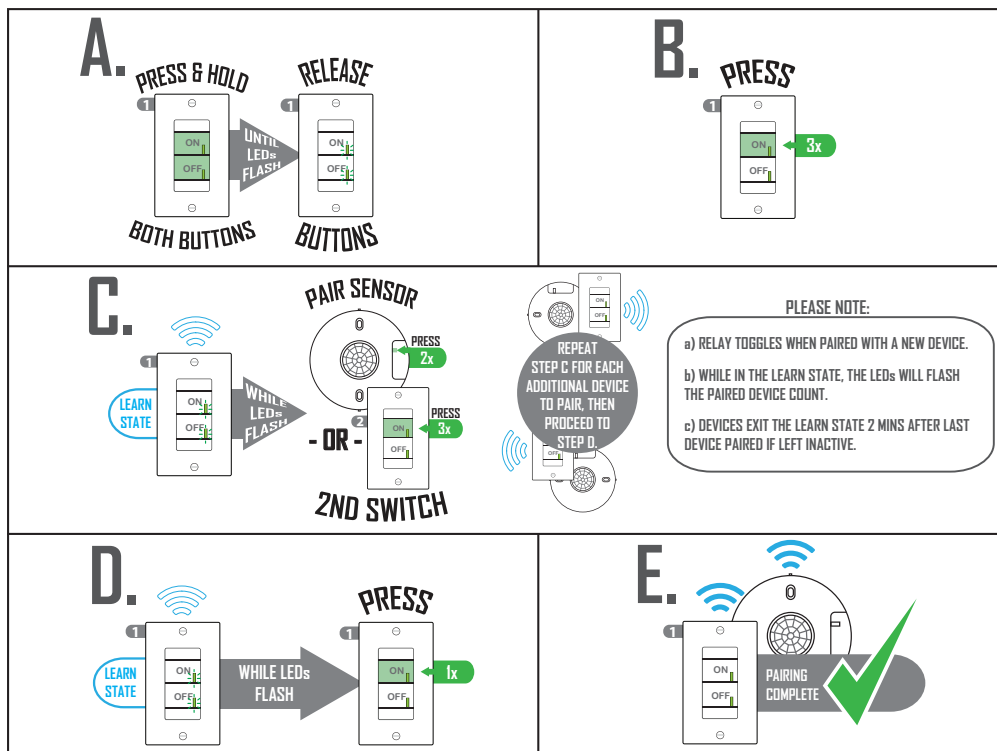


BI-LEVEL CONFIGURATION:

For Bi-level applications, put both SPODMR WR switches into Learn mode and then pair all sensors. Do not pair the SPODMR WR devices to each other. Note one switch should be set to Manual On/Vacancy operating mode.



PAIRING INSTRUCTIONS Below are instructions for pairing a CM (PDT) xx WR sensor with a SPODMR WR. If pairing sensor to a different RDTIM Wireless load controller, consult device instructions as pairing procedure may be different.



LED STATUS INDICATORS & ERROR CODES

WHILE IN LEARN OR UNLEARN MODE:

PAIRING/DEVICE COUNT: During pairing, LEDs rapid flash together, pause, then slow flash 1x for each learned (paired) device, wait 2 seconds, and then repeat (e.g., for 4 paired devices the LEDs would rapid flash, pause, slow flash 4x, pause, then repeat).

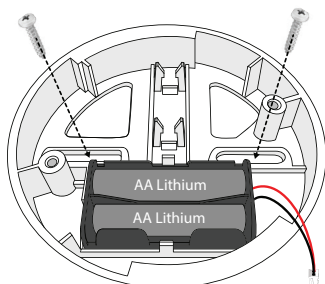
RANGE WARNING: A double rapid flash indicates a paired device may be at the limit of the wireless range.

WHILE IDLE:

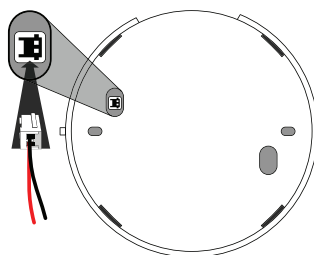
SENSOR LOW BATTERY WARNING: A rapid flash followed by 3 blinks indicates a CM (PDT) xx WR sensor has low battery.

LOST TRANSMISSION ERROR CODES: If all paired occupancy sensors stop transmitting, 15 minutes after the last transmission from the last occupancy sensor the LEDs will begin blinking an error code (rapid flash followed by a single blink) and the switch will enter toggle mode, defaulted On. Clear error code by pairing a new occupancy sensor, issuing an Unlearn All command or initiating an Unlearn All Inactive Devices command.

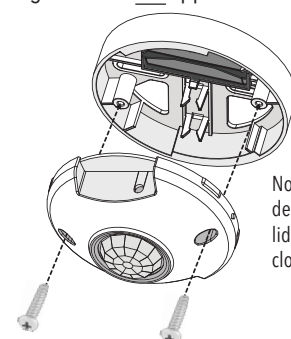
1. Screw battery extension ring to ceiling using included pointed tip screws (qty 2).
2. Install batteries.



3. Plug battery connector into back of sensor



4. Screw sensor to battery extension ring using included flat tipped screws (qty 2)



Note: Install decorative sensor lid by rotating clockwise

CM xx WR OPERATIONAL SETTINGS

Use push-button on side of sensor to change settings.

* Denotes factory setting

**Applies to Dual Technology (-PDT) sensors only

Sensor Teach Mode - see diagram on page 4

The operational state of a sensor when it will transmit its sensor ID to facilitate pairing with other devices.

Step 1. While switch is in Switch Learn Mode, press and release sensor button 2 times

Step 2. The sensor's LED will rapid flash when transmitting

Note:

1. Sensor resumes normal operation after one transmission is sent.
2. Use this procedure to unpair a sensor when a switch is in **Unlearn** mode.

Occupancy Time Delay

The length of time a paired **SPODMR WR** switch's relay will remain closed after the last occupied transmission from a sensor has been received. For **PIR** sensors, the *Occupancy Time Delay* can be set from the sensor (see below steps) or the switch.

For **Dual Tech** sensors, the *Occupancy Time Delay* must be set from the sensor (see below steps) and only after it is paired with the **SPODMR WR** switch.

Step 1. Press and release sensor button 4 times

Step 2. LED will flash back current setting (see selections 1-13 below)

Step 3. To change setting, press sensor button the number of times corresponding to the new desired setting from the below choices:

1 - 30 sec	5 - 10.0 min*	9 - 20.0 min	13 - 30.0 min
2 - 2.5 min	6 - 12.5 min	10 - 22.5 min	
3 - 5.0 min	7 - 15.0 min	11 - 25.0 min	
4 - 7.5 min	8 - 17.5 min	12 - 27.5 min	

Step 4. LED will flash back new setting (repeats 3 times, then exits)

Notes:

1. The sensor Heartbeat Setting will automatically be adjusted to match this setting if under 5 minutes, and will be adjusted to 5 minutes for any higher setting.

Sensor Test Mode

Temporarily sets the *Occupancy Time Delay* on the sensor and any paired **SPODMR WR** switches to 10 seconds. Sensor LED flashes every 5 seconds indicating PIR occupancy.

To **Enter** test mode:

Step 1. Press and release sensor button 6 times

Step 2. Wait until LED begins to flash back

Step 3. Press and release sensor button twice

To **Exit** test mode:

Step 1. Press and release sensor button 6 times

Step 2. Wait until LED begins to flash back

Step 3. Press and release sensor button once

Notes:

1. Sensor Test Mode expires automatically after 10 min.
2. Dual Technology (Microphone) detections while in Sensor Test Mode will not reset 10 second time delay.
3. While in Sensor Test Mode, the sensor Heartbeat Setting will be 5 seconds.

Microphone Setback Time **

Maximum duration that only microphone detections (without any PIR detections) will keep the lights on.

Step 1. Press and release sensor button 5 times

Step 2. LED will flash back current setting (see selections 1-5 below)

Step 3. To change setting, press sensor button the number of times corresponding to the new desired setting from the below choices:

1 - 15 min	3 - 45 min	5 - Infinite
2 - 30 min	4 - 1 hr*	

Step 4. LED will flash back new setting (repeats 3 times, then exits)

Heartbeat Settings

Frequency that the sensor will transmit status information. See section at bottom of page for more detailed explanation.

Step 1. Press and release sensor button 3 times

Step 2. LED will flash back current setting (see selections 1-3 below)

Step 3. To change setting, press sensor button the number of times corresponding to the new desired setting from the below choices:

1 - 30 sec **2** - 2.5 min **3** - 5.0 min*

Step 4. LED will flash back new setting (repeats 3 times, then exits)

Notes:

1. It is recommended that the *Heartbeat Setting* be left alone as it will automatically adjust if necessary with the *Occupancy Time Delay*.
2. A *Heartbeat Setting* set shorter than 5 min will reduce battery life.

Microphone Enable/Disable **

Step 1. Press and release sensor button 7 times

Step 2. LED will begin flashing current setting (see selections 1-2 below)

Step 3. To change setting, press sensor button the number of times corresponding to the new desired setting from the below choices:

1 - Disable 2 - Enable*

Step 4. LED will flash back new setting (repeats 3 times, then exits)

Sensor Reset

Returns sensor to original factory settings.

Step 1. Press and release sensor button 9 times

Step 2. LED will flash once

Step 3. Press and release button 2 times

Step 4. LED will flash back twice (repeats 3 times, then exits and resets)

SENSOR HEARTBEAT SETTING EXPLAINED

The *Heartbeat Setting* represents how often the sensor will transmit status information to the switch. The factory default setting is 5 minutes. When a sensor initially detects occupancy, it immediately communicates an occupied message. Then, from that point forward, every 5 minutes the sensor communicates whether or not occupancy has been detected again since the last communication. Functionally, this means that if the *Occupancy Time Delay* is set to 10 minutes with a 5 minute sensor heartbeat, the "actual" time it will take for the sensor to turn the lights off after leaving a space is between 10 and 15 minutes, depending on how long after the last heartbeat transmission the space was vacated.

For example, if the occupant leaves 1 minute after the last heartbeat communication, the sensor will wait 4 more minutes before transmitting the occupied message. When the switch receives the occupied status, it will then begin counting down the 10 minute *Occupancy Time Delay*. Therefore, a total of 14 minutes will elapse before the lights turn off. As a rule of thumb, assume the "actual" time delay is the *Occupancy Time Delay* added to the *Heartbeat Setting*. In this case, a 10 minute *Occupancy Time Delay* and a 5 minute *Heartbeat* means it can take up to 15 minutes for the lights to turn off.

SPODMR WR OPERATIONAL SETTINGS Use ON/OFF buttons on switch to change settings; * denotes factory setting.

Switch Learn (Pairing Mode) - see page 4 diagram

The operational state when a switch unit will accept teach broadcasts from remote devices (e.g. sensors). Once received, the remote device will be added to the switch unit's list of learned (paired) devices.

- Step 1.** Press and hold both switch buttons for 3 seconds (i.e. until button LEDs start flashing together).
- Step 2.** Press switch's ON button 3 times. Switch will now be in "learn mode".

Notes:

1. While in *Switch Learn Mode*, the switch unit's LEDs will rapid flash then slow blink the number of learned devices, and repeat. (See page 4 for more details regarding device count blinkout.)
2. The unit will stay in *Switch Learn Mode* for 2 minutes after last device was learned, or until switch's ON button is pressed.
3. Each time a new device is learned by (e.g. paired with) the switch, the switch will toggle its relay. Wait a minimum of 4 seconds before pairing another device.

Pairing a 2nd Switch - see page 4 diagram

To pair a 2nd SPODMR WR switch or a RDTTM Wireless rocker switch (model XCR 1PWH) follow below procedure:

- Step 1.** While the first SPODMR WR switch is in *Switch Learn Mode*, press and release the 2nd switch's ON button (or rocker button) 3 times

Operational Modes

Selection of Auto-On, Manual-On, or Predictive w/ Expiration operating modes.

- Step 1.** Press and hold both switch buttons for 3 seconds (i.e. until button LEDs start flashing together)
- Step 2.** Press switch's ON button 5 times
- Step 3.** LED will flash back current setting (see selections 1-3 below)
- Step 4.** To change setting, press switch's ON button the number of times corresponding to the new desired setting from the below choices:

1 - Auto-On:

Load will automatically turn on when occupied and off when vacant. Pressing OFF will turn the load off and disable occupancy detection until ON is pressed.

2 - Manual-On/Vacancy (*default for -SA option units): Sensor functions as a vacancy detector, turning load off after occupancy is no longer detected. Load must be turned on manually by pressing ON button each time the room is entered. After the sensor times out, there is a 10 second grace period in which detection of occupancy will automatically turn the load back on.

3 - Predictive Mode w/ Expiration (*default for non-SA units): Load will automatically turn on when occupied and off when vacant. Load can be overridden to off by pressing OFF button. The load will remain off if the room remains occupied. However, after the room becomes vacant, the switch will revert back to auto on/off operation after *Occupancy Time Delay* expires.

- Step 5.** Switch's LED will flash back current setting (repeats 3 times, then exits)

Occupancy Time Delay

The length of time a switch's relay will remain closed after the last occupied transmission from a sensor has been received. When paired with **CM xx WR** series **PIR** sensors, the *Occupancy Time Delay* can be set from the switch (see below) or from the sensor (**recommended**). See sensor instruction sheet.

When paired with **CM PDT xx WR** series **Dual Tech** sensors, the *Occupancy Time Delay* must be set from the sensor (see sensor instruction sheet) and only after it is paired with the **SPODMR WR** switch. This ensures that the sensor's internal Microphonics time delay matches the switch's *Occupancy Time Delay*.

- Step 1.** Press and hold both switch buttons for 3 sec (until LEDs start flashing)
- Step 2.** Press switch's ON button 2 times
- Step 3.** LED will begin flashing current setting (see selections 1-13 below)
- Step 4.** To change setting, press switch's ON button the number of times corresponding to the new desired setting from the below choices:

1 - 30 sec	5 - 10.0 min*	9 - 20.0 min	13 - 30.0 min
2 - 2.5 min	6 - 12.5 min	10 - 22.5 min	
3 - 5.0 min	7 - 15.0 min	11 - 25.0 min	
4 - 7.5 min	8 - 17.5 min	12 - 27.5 min	

- Step 5.** LED will flash back new setting (repeats 3 times, then exits)

Notes:

1. The sensor *Heartbeat Setting* will need to be adjusted on the sensor to match this setting if 5 minutes or under, and be set to 5 minutes for any higher setting. See section at bottom of page 5 for more detailed explanation.

Unlearn (Unpair)

When a teach broadcast is received by a switch from a remote device, it is removed from the unit's list of learned (paired) devices.

- Step 1.** Press and hold both switch buttons for 3 seconds (i.e. until button LEDs start flashing together)
- Step 2.** Press switch's ON button 4 times

Notes:

1. While in Unlearn Mode, the unit will rapid flash then slow blink the number of learned devices, and repeat.
2. Unit stays in Unlearn Mode for 2 minutes, or until one device is unlearned. Press sensor button 2 times to unlearn (unpair).
3. Each time a new device is unlearned by (e.g. unpaired with) the switch, the switch will toggle its relay.

Switch Diagnostic / Reset / Unlearn All

Provides options to reset and/or unlearn currently paired remote devices. Also provides total paired and inactive device count information.

- Step 1.** Press and hold both switch buttons for 3 seconds (i.e. until button LEDs start flashing together)
- Step 2.** Press ON button 9 times
- Step 3.** LED will flash back current setting (see selections 1-8 below)
- Step 4.** To change setting, press switch's ON button the number of times corresponding to the new desired setting from the below choices:

- 1 - Do nothing*
- 2 - Reset settings to factory default and unlearn all
- 4 - Unlearn all paired devices
- 5 - Reset settings to factory defaults (without unlearning devices)
- 6 - Learned Device Count
- 7 - Inactive Sensor Count (Paired sensors that have stopped transmitting)
- 8 - Unlearn All Inactive Sensors

- Step 5.** LEDs will flash back current setting (repeats 3 times, then exits)

Switch Status LED Operation

Controls the normal operation of the button's LEDs on the switch unit.

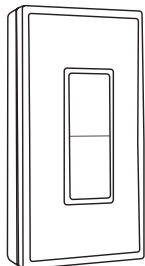
- Step 1.** Press and hold both switch buttons for 3 second (i.e. until button LEDs start flashing together)
- Step 2.** Press switch's ON button 11 times
- Step 3.** LED will flash back current setting (see selections 1-2 below)
- Step 4.** To change setting, press switch's ON button the number of times corresponding to the new desired setting from the below choices:

- 1 - LEDs enabled* (indicates current status of relay)
- 2 - LEDs disabled

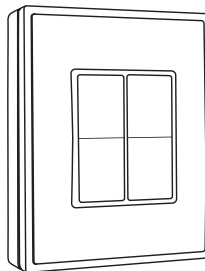
- Step 5.** LED will flash back current setting (repeats 3 times, then exits)

Note: In disabled mode, LEDs will still flash when button is pushed, device is in *Learn* or *Unlearn* mode, or when device is flashing back a setting or error code.

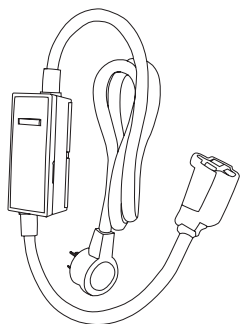
COMPATIBLE xCELLA PRODUCT FAMILY WIRELESS ACCESSORIES



Rocker Switch
902MHz
Model: XCR 1PWH
CI Code: *220UP4



Dual Rocker Switch
902MHz
Model: XCR 2PWH
CI Code: *220W90



Plug-Load Controller
902MHz
Model: XCR PSM
CI Code: *222GFW

COMPLIANCE INFORMATION

SPODMR WR: FCC: VR8-SSIINTR002
IC: 7791A-SSIINTR002

CM xx WR: FCC: VR8-SSIINTR003
IC: 7791A-SSIINTR003

These devices comply with part 15 of the FCC Rules. Operation is subject to the following two 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.

The intentional radiator is identical in all variants of the apparatus.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAN RSS-Gen/CNR-Gen:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur approuvé pour l'émetteur par Industrie Canada.

Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Note: 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 or more 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.