

USER'S GUIDE

SMARTWALK™ XP & XP-S (solar)



Online Manual

DESCRIPTION

The SmartWalk XP & XP-S are the first microwave sensors specifically designed to provide short range hands-free pedestrian presence detection at the curbside area of a crosswalk or roadside at a trail crossing. The sensor is intended to be pole-mounted near the crosswalk and can be used in lieu of the pedestrian crosswalk button.



INCLUDED IN THE BOX

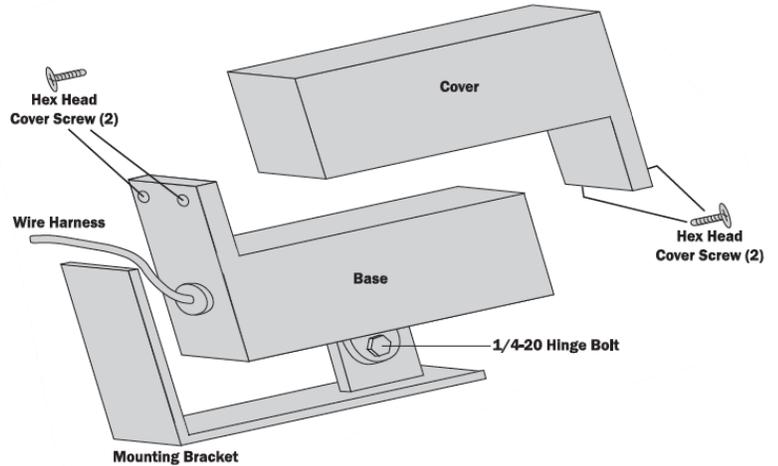
(1)	XP or XP-S Microwave Sensor
(1)	Wire Harness – 24" Length (with in-line fuse protection)
(1)	24 Volt, 1A Step-Down Transformer (not incl. in the XP-S box)
(1)	Narrow Antenna (installed)
(1)	Installation Instructions

SPECIFICATIONS

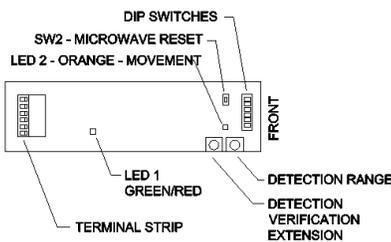
Model	SmartWalk XP & XP-S (solar)
Input Power	XP: 12-24V AC/DC XP-S: 12 VDC ONLY
Power Consumption	XP: 2W Maximum XP-S: 1W Maximum
Output Contacts	Form C, Rated at 3 Amps
Relay Contact Ratings	3A:120V AC; 3A:60V DC
Temperature Rating	-22°F to 158°F (-30°C to 70°C)
Weight	4 lbs.
Module Size	7" L x 4" W x 4-1/8" H

REMOVE THE COVER OF THE SENSOR

- Remove (2) ¼" hex head screws at the back cover and (2) ¼" hex screws at the lower front side.
- NOTE: There is NO need to remove any of the Phillips head screws on the cover.**
- Lift the cover upward for removal.
- All wiring to the sensor and all available adjustments are made while the cover is off.

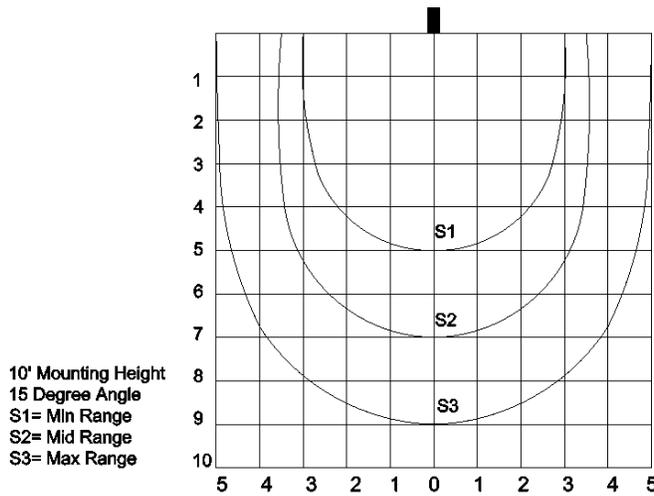


PCB IDENTIFICATION



PATTERN CHARACTERISTICS

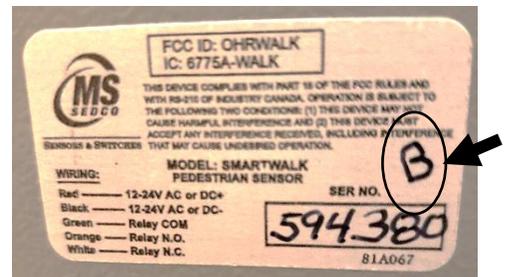
- The narrow antenna is factory installed by default. A wide antenna is not used for this product.
- The detection pattern shown below is an approximation only. Detection pattern size shown may slightly vary based upon actual site conditions.



- Remember some general rules regarding the behavior of microwave. The zones can be related to the behavior of a flashlight:
 - As the sensor is pointed straight down, the resulting pattern will be more spherical.
 - As the angle from vertical is increased, the zone will start to extend away and become more elliptical.
 - As the sensor is raised in mounting height, the size of the detection zone also increases.
 - It is not always possible to predict what the exact settings will be for a given application. As such, pick the best settings based upon these simple facts, then walk test the sensor and adjust for optimal performance as necessary.

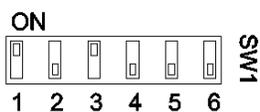
SENSORS IN CLOSE PROXIMITY

- If an application calls for 2 or more sensors in close proximity to one another, it is advisable to mix the frequencies to prevent possible interference from one sensor to another.
- If sensors are pointed towards each other or if the detection zones are extremely close to one another, the frequencies should not be the same. If in doubt, use different frequencies.
- The frequency of each sensor is located on the back exterior vertical face of the housing and is signified by a letter, typically a B, C, or D located just above the serial number.



SETTING THE DIPSWITCHES

1 & 3 ON BY DEFAULT

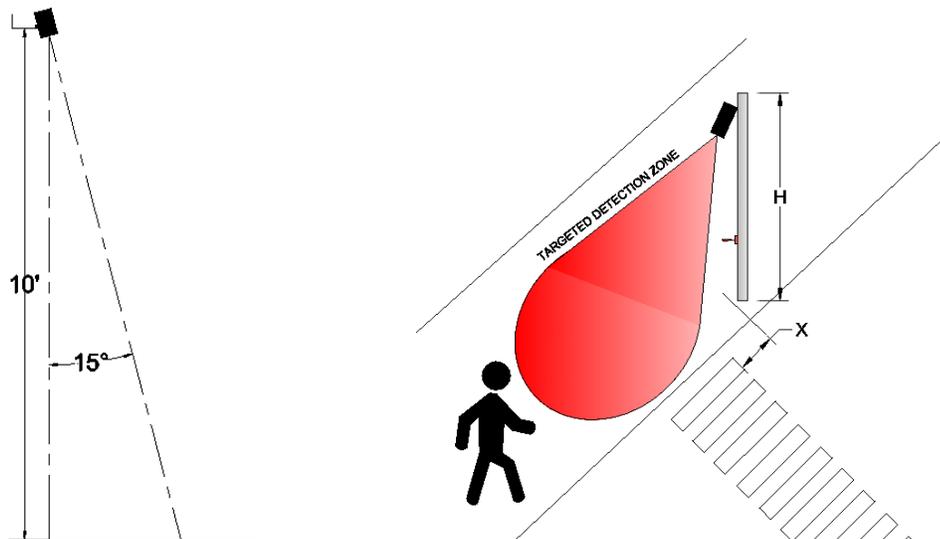


- Prior to installing the sensor at its mounting location, configure the dipswitches for the application.
- dipswitches are located at the front end of the circuit board.
- To place a dipswitch in the ON position, move it away from the number of the switch.

SW	DEFAULT	SWITCH DESCRIPTION	SWITCH OFF	SWITCH ON	REMARKS
1	ON	Detection Direction	Uni-Directional Motion Detection	Bi-Directional Motion Detection	When Bi-directional detection is selected, dipswitch 6 is bypassed.
2	OFF	Pedestrian Motion Sensitivity	Increased Sensitivity	Decreased Sensitivity	
3	ON	Pedestrian Presence Sensitivity	Increased Sensitivity	Decreased Sensitivity	
4	OFF	Fail-Safe State	Disabled	Enabled	
5	OFF	Pedestrian Presence	Enabled	Disabled	"Detection Verification Extension" adjustment is bypassed and set to 0 seconds when dipswitch 5 is disabled.
6	OFF	Approach / Depart	Approach	Depart	When Approach-Only or Depart-Only detection is selected, then dipswitch 1 must be set to Uni-directional (OFF).

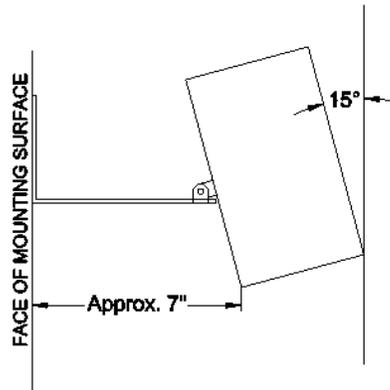
MECHANICAL INSTALLATION

- The XP installation is intended for mounting to a utility pole or other rigid structure. The sensor may be directly mounted by the attaching bracket to a pole, or by banding to the pole.
 - Note: Mounting screws and bands are not included in the SmartWalk product box.
- Do not connect the input power until the mechanical installation and all wiring is completed.
- When installing the XP sensor, the following guidelines must be followed:
 - 24" maximum offset from edge of crosswalk to pole (dimension X)
 - Sensor mounting height should be 10' to 12' (dimension H)
 - The sensor should be angled out from the vertical plane approximately 15 degrees for optimal performance.



HELPFUL HINTS FOR MOUNTING & LOCATION

- Try to keep the mounting height at approx. 10’ to 12’. Higher mounting heights will increase the size of the detection zone and will make it difficult to prevent unwanted vehicle detection as the targeted zone may extend into the roadway. Fine tuning can be obtained by adjusting the “range” setting.
- Ideally, the distance from the pole to the edge of the crosswalk should be about 2’. This is to accommodate an optimal 15-degree angle on the sensor when it is mounted at 10’ to 12’. As the sensor is mounted higher, the sensor angle may need to be adjusted to detect within the targeted detection zone. At higher mounting heights, the sensor may be more prone to unwanted vehicle detection as part of the zone may be in the roadway – depends on pole location relative to the crosswalk.
- If an inclinometer is unavailable to determine mounting angle, simply measure the distance from the mounting surface for the sensor bracket (such as a pole) to the bottom corner of the sensor. When the sensor is at approx. 15 degrees, this dimension will be approx. 7”. Remember, if the pole is further from the crosswalk, this angle may need to be slightly increased.



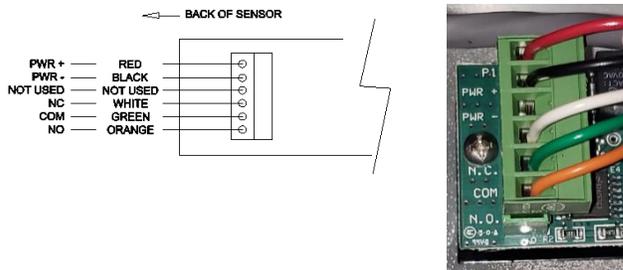
LED INDICATIONS

LED’s are located on the PCB and are viewable with top cover removed.

LED 1 STATUS	PERFORMANCE
Solid Green	Sensor is on and is in a state of non-detection.
Flashing Red	There is movement within the detection zone but not enough to trigger the sensors output.
Solid Red	Detection has occurred and the output is active.
LED 2 STATUS	
Solid Orange	Sensor is detecting movement within the detection zone.

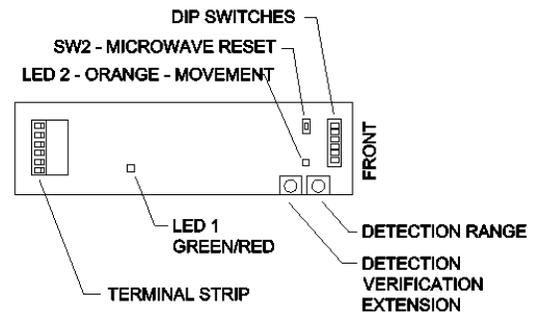
WIRING

The electrical connection terminal is at the back end of the sensor. The 24” harness is pre-wired at the factory as follows:

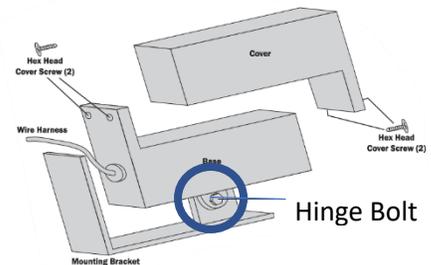


POWER-ON & SETUP

- Confirm all electrical connections have been completed and the sensor is in its proper mounting location.
- Apply low voltage power to the sensor. Do not ground the secondary side of the transformer.
- Observe the LED indication at the top of the sensor – the following should occur:
 - The sensor shall blink green 3 times once power has been applied
 - The sensor LED changes to a solid green indicating sensor is ready for setup and alignment.
- To simplify the initial walk-test of the detection zone, check to ensure the potentiometer for the “Detection Verification Extension” is set at its minimum value – all the way counter-clockwise.



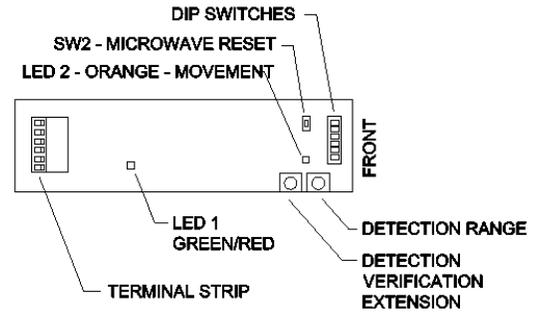
- To determine the detection zone, walk in and out of the targeted detection zone and note the trigger points of the area so it can be mapped out on the sidewalk.
 - Note: The sensor will detect human movement in a direction defined by the value of dipswitch #1.
 - If the sensor is set to uni-directional mode, it will only detect movements of a frontal approach to the sensor.
- If the sensor is set to bi-directional, it will detect movements toward the sensor from any direction.
- If the position of the targeted detection zone is incorrect for the application, re-aim the sensor for better alignment to the intended area of detection. This can be done by loosening the hinge bolt of the sensor to adjust angle, or by loosening the bracket attachment screws to for lateral adjustment. Make the proper adjustments and then re-tighten the hardware.



- HELPFUL HINTS:
 - Remember to walk-test the entire targeted detection zone , mapping out the zone to ensure it is providing adequate detection coverage.
 - The “Range” adjustment potentiometer can be used to effectively enlarge or reduce the detection zone. By default, the range is at its maximum setting.
 - Higher mounting heights equate to larger detection zones. As such, if the sensor must be mounted higher than 10’ due to obstructions on the pole, such as signage, it will require more care in the setup to try and eliminate unwanted detections from peripheral movements on the sidewalk or even cars passing through the intersection near the curb. If the sensor is unable to perform sufficiently at the higher height, a lower mounting position may be necessary.
 - When the sensor is configured for uni-directional detection, it will require more of a frontal approach to the sensor to achieve detection in the targeted detection zone. As one progressively moves off center from a frontal approach to a side or rear approach, the sensor will eventually no longer detect you. If detection from any direction is desired, set dipswitch #1 to bi-directional detection.

- Walk in and out of the targeted detection zone to ensure the sensor is detecting from all targeted degrees of approach. If sensitivity is incorrect, alter the setting of the “range adjustment” potentiometer located on the sensor. Clockwise rotation will increase sensitivity which in turn increases zone size.

- As a last adjustment, note the “Detection Verification Extension”. This function is used to provide a delay between the point of detection and the point of sending an output to the controller. The most common reason to add a delay is to help avoid unwanted detections that occur from people that may be passing by the outer fringe of the targeted detection zone or by the occasional stray detection caused by a nearby movement of a vehicle, for example. Keep in mind, as the timer is increased, so too then is the time it takes to detect an intended approach to the sensor. For a typical crosswalk environment , the timer is usually never more than 1-2 seconds. Adjust per your specific application.



RELATED PRODUCTS



The SmartWalk XM is designed to monitor the curbside lane of a crosswalk for pedestrian occupancy and provide an extension of the pedestrian clearance timer.



The SmartWalk TX microwave sensor is specifically designed to monitor trails for users approaching a road crossing from up to 60 feet away.



Intersector™ - (PN: TC-CK1-SBE) microwave based vehicle motion and presence detector



VMS Intersector™ - (PN: TC-CK1-VMS) microwave based vehicle motion detector



TC26-B - microwave based vehicle motion detector



Intersector™ - TCIB Interface Boards

RMA PROCEDURE



Upon confirmation of a failed product, an RMA form must be filled out online prior to returning the product to MS Sedco.

Go To: <https://mssedco.com/return-repair-policy-form/>

Or scan the QR code with your smartphone to go directly to the online form.

TERMS OF WARRANTY

MS SEDCO, Inc. guarantees this product to be free from manufacturing defects for three years from the date of shipment from our factory. If, during this period, the product fails to operate and has not been tampered with or abused, the unit can be returned prepaid to the factory and be repaired free of charge. After three years, the unit will be repaired for a nominal service charge. No repairs will be made if the product is older than 8 years from date of invoice. The terms of warranty apply to the original buyer of the product and are not transferrable. Limited warranty is in lieu of all other warranties, expressed or implied, including any implied warrantability of merchantability. No representative or person is authorized to assume for MS SEDCO any other liability in connection with the sale of our products. All warranties are limited to the duration of this written limited warranty. In no event shall MS SEDCO be liable for any special, incidental, consequential or other damage arising from any unclaimed breach of warranty as to its products or services. Terms of warranty are subject to change without notice.

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