

# SmartWalk™ XP-S

Solar Trail and Crosswalk Presence Sensor

INSTALLATION INSTRUCTIONS

## Section 1

### General Description

The SmartWalk XP-S is the first microwave sensor specifically designed to provide short range pedestrian presence detection in the targeted curbside area of a crosswalk or roadside at a trail crossing, making it an excellent alternative to manual push buttons that require human interaction.

## Section 2

### Installation

The SmartWalk XP-S easily mounts to existing poles at a suggested height of 10–12 feet to discourage vandalism and provide an optimum target area. The versatile mounting bracket can be attached with 2 bolts through 2 1/2" prepunched mounting holes or by banding to the pole.

### Mounting—(see Figure 1)

1. Remove 1/4-20 hinge bolt holding the mounting bracket to the sensor housing and detach the mounting bracket.
2. Using the bracket as a template, mark and drill mounting holes in the pole and attach or band the mounting bracket to the pole in the desired location.
3. Re-attach the sensor housing to the mounting bracket with the 1/4-20 hinge bolt removed in step 1.

### Wiring—(see Figure 2)

1. Make all wiring connections to the wire harness PRIOR to applying power.
2. The default setting for the relay is FAIL SAFE (dipswitch #4 is on).

#### FAIL SAFE ON (Relay Energized) Wiring Diagram Dipswitch #4 is ON

Red Wire = Voltage In: 12V DC+  
Black Wire = Voltage In: 12V DC-  
White Wire = Relay Normally Open (N.O.)  
Green Wire = Relay Common (COM)  
Orange Wire = Relay Normally Closed (N.C.)

#### FAIL SAFE OFF (Relay De-Energized) Wiring Diagram Dipswitch #4 is OFF

Red Wire = Voltage In: 12V DC+  
Black Wire = Voltage In: 12V DC-  
White Wire = Relay Normally Closed (N.C.)  
Green Wire = Relay Common (COM)  
Orange Wire = Relay Normally Open (N.O.)



**NOTICE:** Operating voltage is 12V DC and must be applied through an **isolated power source** for proper electrical protection.

Upon power up, the LED will blink green 3 times and then stay solid green. **The XP-S is now ready for set up and alignment.**



**WARNING: DO NOT apply 120V AC primary power to the transformer until all secondary wiring is complete.**



**WARNING: To limit exposure to electrical damage from power surges, ALWAYS wire the sensor through the transformer that is provided or a TCPS series isolation module (sold separately).**



**WARNING: DO NOT ground one side of the secondary of the transformer. Circuit ground of the unit is electrically connected to the housing. Grounding one side of the transformer may create a direct short that will permanently damage the device.**

For more information, call us toll-free at (317) 842-2545.

### Set Up and Alignment—(see Figures 1 & 2)

Sensor adjustments are made with the housing cover off. Remove the four hex head screws. Two are located on the front plate and two are on the back plate. The cover is then removed by lifting up slightly and sliding it forward (Fig. 1).

1. Select and install patch antenna as shown (**Fig. 1b**). The wide antenna is installed at factory
2. Set the sensor parameters via the 6 dip switches located on the printed circuit board (Fig. 2).



**NOTICE:** When Approach-Only or Depart-Only detection (dip switch 6) is selected, then dip switch 1 must be set to Unidirectional (OFF).



**NOTICE:** When Bidirectional detection (dip switch 1) is selected, then dip switch 6 is bypassed.

3. Align the SmartWalk by adjusting the **Range Potentiometer** and the aiming angle to achieve the desired pattern placement and size. To adjust the sensor's aiming angle, loosen the 1/4-20 hinge bolt, adjust and then re-tighten.
4. Set the **Detection Verification Time Potentiometer**. This is the amount of time a pedestrian must be

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detected in the target zone before the sensor will send a signal to a controller and is adjustable from 0-10 seconds.



**NOTICE:** To help avoid false activations, increase detection verification time to greater than zero.

### LED Operation:

With no pedestrians detected, the LED will be solid green. Upon the detection of a pedestrian within the target area, the LED will rapidly flash red until one of the following occurs:

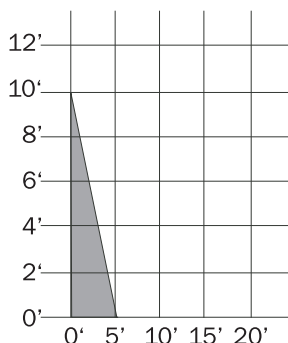
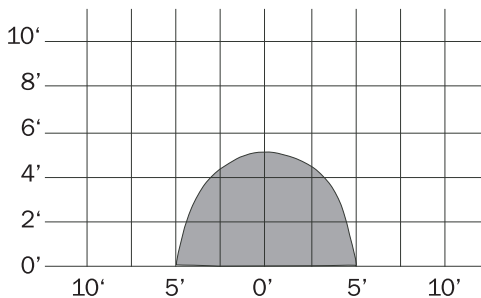
- Detection is lost—LED goes back to solid green.
- Relay turns on—the **Detection Verification Time Potentiometer** located on the PCB allows an adjustable delay of 0-10 seconds to be set between initial detection and when the relay turns on. At the time the relay turns on, the LED will go to solid red. Once detection is lost, the LED goes back to solid green.

5. PRIOR to replacing the housing cover, walk test the sensor to ensure it is set up properly.
6. Replace the housing cover and tighten all screws.

*NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.*

### Pattern Diagram

Mounting Height 10' - Tip Angle 15°  
Range: Maximum



### Section 3

#### Technical Data

Model.....	SmartWalk XP-S
Operating Frequency.....	24.125 GHz ± 60 MHz (K-band)
Detection Method.....	Microprocessor-Analyzed Doppler Microwave with MICRO- MOTION technology
Detection Pattern.....	Adjustable with cover off
Detection Angle.....	Adjustable
Detection Mode.....	Selectable: Approach-Only, Depart-Only or Bidirectional
Detection Verification	
Time.....	0.1 to 10 seconds
Power Requirements.....	12V DC ± 10%
Power Consumption.....	1.0W maximum
Relay Output.....	Form C, rated at 1 amp @ 24V DC (N.O. and N.C.)
Output Power.....	5mW typical
Temperature.....	-29.2 °F to 165 °F (-34 °C to 74 °C)
Size.....	4"W x 4"H x 7"L (10.2cmW x 10.2cmH x 17.8cmL) (measurements include bracket)
Enclosure.....	Powder coated gray aluminum housing
Weight.....	approx. 4 lbs. (1.8 kg)
Mounting.....	Heavy-duty bracket pre-drilled & slotted for pole mount

### Section 4

#### Warranty

MS SEDCO guarantees this product to be free from manufacturing defects for 18 months from invoice date unless specified by MS SEDCO. If, during the first 18 months, this device fails to operate and has not been tampered with or abused, the unit can be returned prepaid to the factory and it will be repaired free of charge. After 18 months, the unit will be repaired for a nominal service charge. **This limited warranty is in lieu of all other warranties, expressed or implied, including any implied warrantability of merchantability, and 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 damages arising from any claimed breach of warranty as to its products or service.**

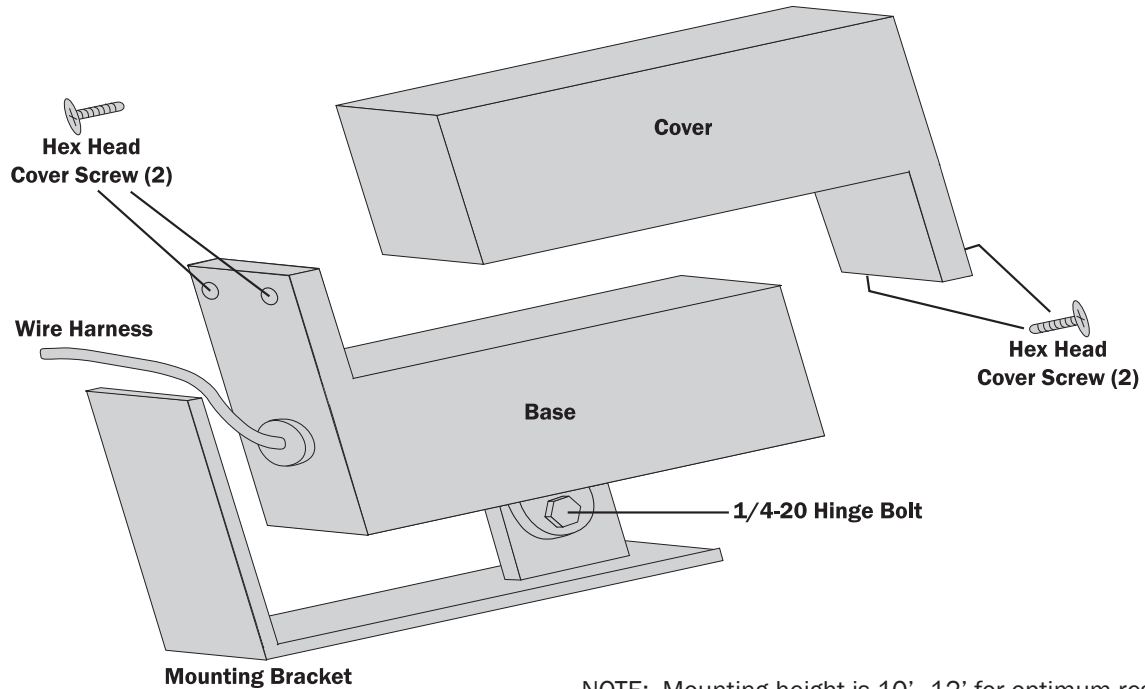


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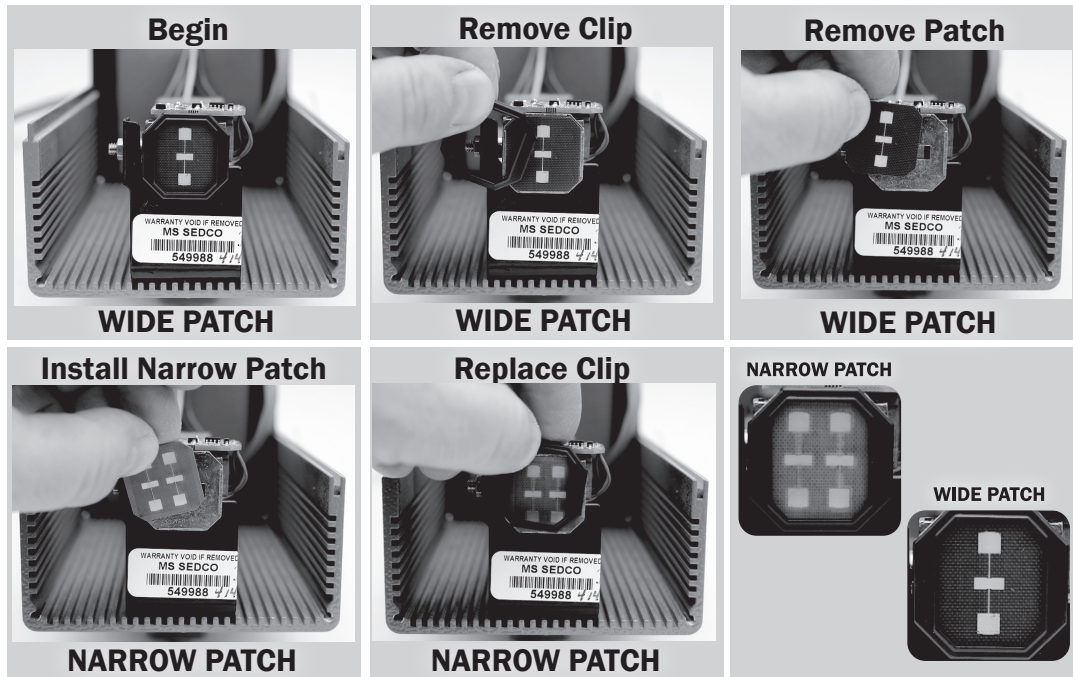
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**FIGURE 1a**  
SmartWalk XP-S Housing



NOTE: Mounting height is 10' - 12' for optimum results.

**FIGURE 1b**  
Switching from Wide\* to Narrow Patch Antenna



\*SmartWalk XP-S is shipped with wide antenna installed.



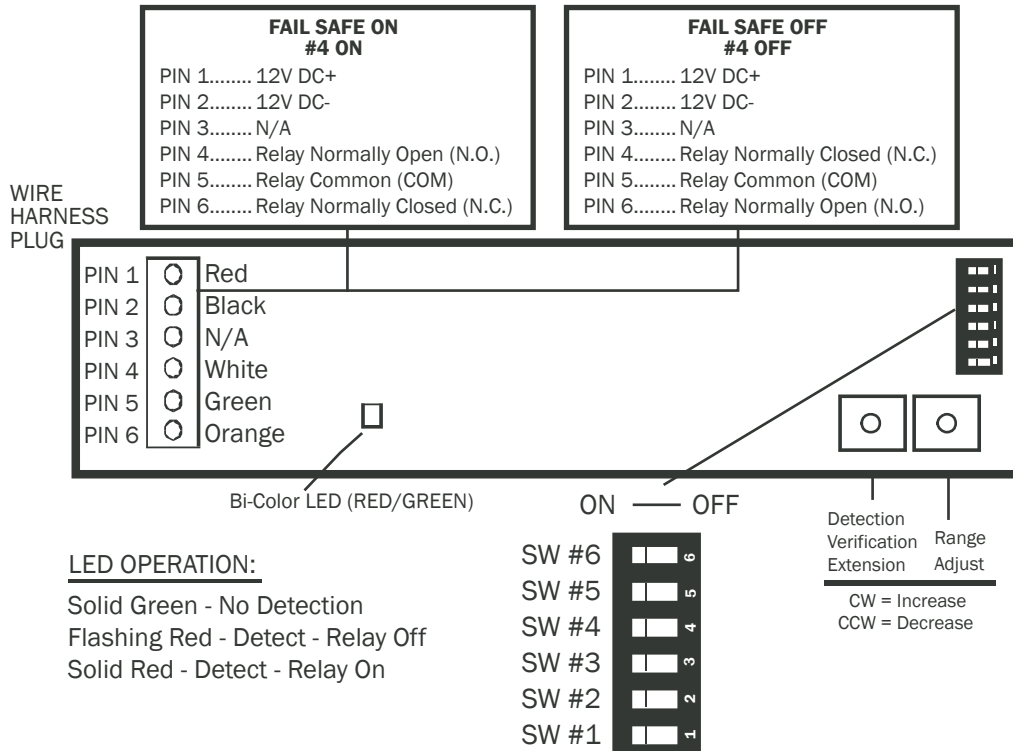
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**FIGURE 2**

## SmartWalk XP-S Layout & Wiring Connections



### Dip Switch Settings

SW	SWITCH DESCRIPTION	SWITCH 'OFF'	SWITCH 'ON'
1*	Detection Direction	Unidirectional Motion detection	Bi-directional Motion detection
2	Pedestrian Motion Sensitivity	Pedestrian Motion More Sensitive	Pedestrian Motion Less Sensitive
3	Pedestrian Presence Sensitivity	Pedestrian Presence More Sensitive	Pedestrian Presence Less Sensitive
4	Fail Safe State	Fail Safe Disabled	Fail Safe Enabled
5**	Pedestrian Presence ON/OFF	Enabled	Disabled
6***	Approach/Depart	Approach	Depart

\*When Approach-Only or Depart-Only detection (dip switch 6) is selected, then dip switch 1 must be set to Unidirectional (OFF).

\*\*When Pedestrian Presence is Disabled (dip switch #5) Detection Verification Extension Potentiometer adjustment is bypassed and set to 0 seconds.

\*\*\*When Bidirectional detection (dip switch 1) is selected, then dip switch 6 is bypassed.

