Protection Technologies, Inc.

OUTDOOR "HS" HIGH SECURITY DUAL TECHNOLOGY SENSORS

Installation Guide Supplement

Dated January 24, 2005

For use in conjunction with

PIRAMID XL2 INSTALLATION GUIDE

Dated February 15, 2007

Instructions for:

PIRAMID "HS" Versions

Models:
SDI-76XL-HS
SDI-77XL-HS

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HIGH SECURITY PIRAMID "HS" VERSION

GENERAL:

The MEA (Microwave Electronic Assemblies) for the "HS" Version sensors are derived from our Models SDI-76XL and SDI-77XL. The microwave transceiver and main circuitry of the "HS" Series sensors are virtually identical in features and performance characteristics to the standard PIRAMID XL Series dual technology sensors. However, the "HS" Version of the PIRAMID XL is classified as High Security, as it offers high security features such as "Anti-Masking" and "Remote Self-Test". In addition, the "HS" version offers enhanced detection capability when compared to the standard PIRAMID XL and XL2 versions. The detection parameters are altered to enable the sensors to offer greater overall detection capability for slow moving, fast moving and crawling intruders.

ADJUSTMENTS

THE SENSITIVITY CONTROL SWITCH

The **Sensitivity Control Switch** controls the amount of motion required within the surveillance area to create a sensor alarm. The Sensitivity Control switch adjusts the distance in inches that a target must move toward or away from the sensor to activate the microwave sensor portion.

Note: The more critical adjustment for stability is the **Sensitivity Control Switch** as it is often necessary to adjust the **Range Control Switch** near maximum in order to attain the maximum specified range of the sensor. The Sensitivity Control Switch adjusts the exact (minimum) distance an object must move toward or away from the sensor to initiate a microwave sensor alarm. A field setting of 1, 2, 3, 4, 5 and 6 offer tremendous stability but reduced "transverse" detection. A field setting of 7, 8, 9 and 0 (0 = Maximum sensitivity) offer excellent transverse detection but reduced stability. Please refer to Figure 7 shown below for the actual movement in inches required by PIRAMID XL-MIL for microwave sensor detection to occur.

Sensitivity Control Switch Settings
Models SDI-76-XL-HS and SDI-77XL-HS

Sensitivity Switch Settings	**Microwave Sensor** (Movement Required for MW Sensor Alarm)	**Passive Infrared Sensor** (# of IR Edges Violated for a PIR Sensor Alarm)
0 (Maximum)	2 inches	1
9	4 inches	1
8	6 inches	1
7	8 inches	1
6	10 inches	1
5	12 inches	1
4	14 inches	1
3	16 inches	1
2	18 inches	1
1 (Minimum)	20 inches	1

THE RANGE CONTROL SWITCH

The **Range Control Switch** controls the range of the sensor as it automatically adjusts the range of both the microwave and passive infrared sensor portions. It is good practice to adjust the sensor's range to the lowest setting possible to attain the desired security. However, the sensor is designed to provide stable performance even with the Range Control switch adjusted near the maximum ranges (8, 9, and 0 settings - Note: 0 = Maximum Range).

Range Control Switch Settings
Models SDI-76-XL-HS and SDI-77XL-HS

Range Switch Settings	**SDI-76XL-MIL Equipped with Lens G – High Density**	**SDI-77XL-MIL Equipped with Lens D – Vertical Barrier**
	L x W	**L x W**
0 (Maximum)	50 ft. x 50 ft.	100 ft. x 15 ft,
9	45 ft. x 45 ft.	90 ft. x 12 ft.
8	40 ft. x 40 ft.	80 ft. x 9 ft.
7	35 ft. x 35 ft.	70 ft. x 8 ft.
6	30 ft. x 30 ft.	60 ft. x 7 ft.
5	25 ft. x 25 ft.	50 ft. x 6 ft.
4	20 ft. x 20 ft.	40 ft. x 5 ft.
3	15 ft. x 15 ft.	30 ft. x 4 ft.
2	10 ft. x 10 ft.	20 ft. x 3 ft.
1 (Minimum)	5 ft. x 5 ft.	10 ft. x 2 ft.

Caution: The distances noted are very conservative estimates of the actual range. You must verify the actual range by carefully walk testing the sensor.

Note: "Rule of Thumb" - always adjust range and sensitivity to the lowest possible setting to attain desired coverage. This will enable the greatest stability performance!

PASSIVE INFRARED RANGE ADJUSTMENT

There is a passive infrared sensor range adjustment. The small passive infrared sensor printed circuit board is equipped with a three position (HI, MED, LOW) **IR Range Adjustment Switch**. The greatest range for the infrared sensor is obtained by having the passive infrared RANGE ADJUSTMENT switch in the HI position. However, it is prudent to perform a careful walk-test as the desired coverage may be attained in the more stable MED or LOW positions. PROTECH recommends the lowest possible setting to provide the desired range.

PIRAMID HS Features

The H.S. Models of **PIRAMID** offer several **"special"** high security features that were incorporated into the standard **PIRAMID** units to provide sensors that satisfy virtually all high security requirements specified by U.S. Government security regulatory agencies. The special features are listed as follows:

HS Features

1) Anti-Masking – Special circuitry detects an obstruction of the sensor's faceplate and causes the alarm relay to change state and register a continuous alarm condition.

2) Remote Self-Test – Enables the Stereo Doppler Microwave sensor and passive infrared sensor to be tested from a remote location in the same manner as if physically walk-tested.

3) Remote RF Power Shut-off – Enables the microwave radiation to be shut-off from a remote location.

4) Mechanical Tamper Housing – Normally closed tamper switch with terminal connection.

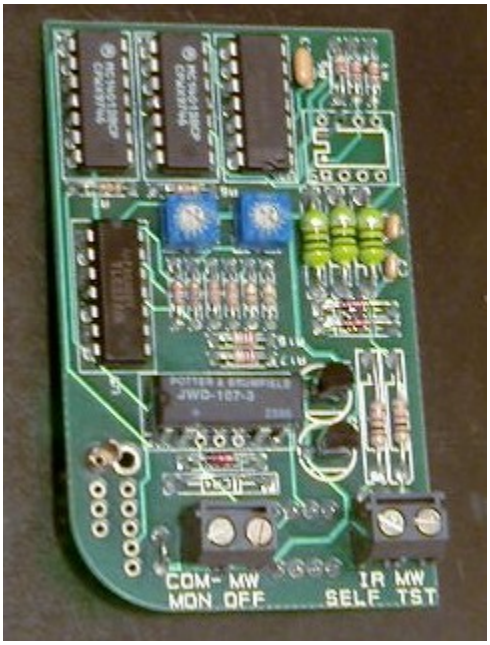
5) Conduit Equipped Wiring Entry – The wiring entry at the back of the unit is a ½" liquid tight conduit fitting that provides environmental and tamper-proof protection for the wiring.

PIRAMID "HS" VERSION – WIRING INSTRUCTIONS

Specifications
Control Voltage Input (SELF-TEST) ---------- 3 to 15 VDC (1000 ohms)
Control Voltage Input (RF SHUT-OFF)---------- 9 to 18 VDC (500 ohms)

1. If remote RF SHUT-OFF is not to be utilized, route wire from Terminal 3 of main printed circuit board (DC pos.) to SHUT-OFF terminal on small auxiliary printed circuit board.

2. If RF SHUT-OFF is to be utilized with the same power supply that is powering sensor, leave jumper J1 intact and route DC voltage (pos.) to SHUT-OFF terminal.



3. If RF SHUT-OFF or remote SELF-TEST is to be utilized with a different power source than the one powering the sensor, cut Jumper J1 and route DC voltage (both pos. and neg.) to SHUT-OFF and COMMON TERMINALS. (Note: This procedure is for ground-loop prevention).

IMPORTANT: VOLTAGE **MUST** BE APPLIED TO SHUT-OFF TERMINAL FOR MICROWAVE PORTION TO OPERATE.