



INDOOR MICROWAVE SENSORS
Installation Guide Supplement
Dated February 8, 2004

For use in conjunction with
INDOOR PIRAMID INSTALLATION GUIDE
Dated November 1, 2006

Instructions for:

PIRAMID "MW" Versions – Stereo Doppler Microwave Only Sensors

Models:

SDI-76MW

SDI-77MW

SDI-76MW-HS

SDI-77MW-HS

SPECIAL PIRAMID SERIES “MW” VERSION

GENERAL:

The MEA (Microwave Electronic Assemblies) for the “MW” Series or Microwave Only sensors are derived from our Models SDI-76 and SDI-77. The microwave transceiver and main circuitry of the “MW” Series sensors are identical in features and performance characteristics as the microwave portion of the PIRAMID dual technology sensors. The “MW” series of Protech sensors is classified as High Security. The “MW” Series sensors offer enhanced detection capability when compared to the standard PIRAMID Dual Technology sensors. The detection parameters are altered to enable the sensors to offer greater overall detection capability for slow moving, fast moving and crawling intruders.

To further enhance the security level of the “MW” Series sensors, Protech offers the “HS” satellite board as an option. The “HS” satellite board has a self-test feature that allows the user to test the functionality of the sensor without a physical walk-test. The “HS” option also includes an anti-masking circuit.

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 (cm) 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 MW for microwave sensor detection to occur.

**Figure 7 – Sensitivity Control Switch Settings
Models SDI-76MW and SDI-77MW**

Sensitivity Switch Settings	Microwave Sensor (Movement Required for MW Sensor Alarm)	
10 (Max.)	2 inches	5 cm
9	4 inches	10 cm
8	6 inches	15 cm
7	8 inches	20 cm
6	10 inches	25 cm
5	12 inches	30 cm
4	14 inches	35 cm
3	16 inches	40 cm
2	18 inches	45 cm
1 (Min.)	20 inches	50 cm

THE RANGE CONTROL SWITCH

The **Range Control Switch** controls the range of the microwave sensor by 10% increments. 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).

Figure 8 – Range Control Switch Settings
Models SDI-76MW and SDI-77MW

Range Switch Settings	SDI-76MW (-HS)	SDI-77MW (-HS)
	L x W	L x W
100% (Max.)	50 x 50 ft.(15m x 15m)	100 x 60 ft. (30m x 18m)
90%	45 x 45 ft.(13.5m x 13.5m)	90 x 54 ft. (27m x 16.5m)
80%	40 x 40 ft.(12m x 12m)	80 x 48 ft. (24m x 14.5m)
70%	35 x 35 ft.(10.5m x 10.5m)	70 x 42 ft. (21m x 12.5m)
60%	30 x 30 ft. (9m x 9m)	60 x 36 ft. (18m x 11m)
50%	25 x 25 ft. (7.5m x 7.5m)	50 x 30 ft. (15m x 9m)
40%	20 x 20 ft. (6m x 6m)	40 x 24 ft. (12m x 7.5m)
30%	15 x 15 ft. (4.5m x 4.5m)	30 x 18 ft. (9m x 5.5m)
20%	10 x 10 ft. (3m x 3m)	20 x 12 ft. (6m x 3.5m)
10% (Min.)	5 x 5 ft. (1.5m x 1.5m)	10 x 6 ft. (3m x 2m)

Caution: The distances noted in Figure 8 would be considered 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!

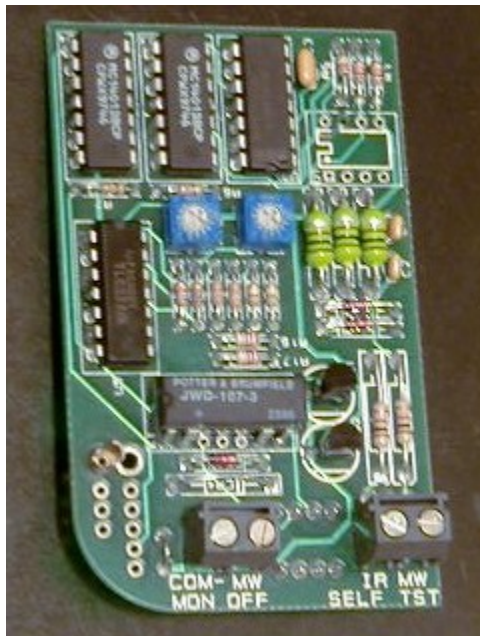
PIRAMID “HS” OPTION – WIRING INSTRUCTIONS

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.