



**ARCHITECTURAL AND ENGINEERING SPECIFICATIONS  
STEREO DOPPLER MICROWAVE EXPLOSION-PROOF INDOOR/OUTDOOR  
INTRUDER DETECTOR PROTECH PIRAMID SDI-77XL2-EX**

PART I      GENERAL

1.01      PURPOSE

- A.      The intent of these specifications is to describe the equipment and functional requirements of an outdoor intrusion detection sensor.

1.02      QUALIFICATIONS

- A.      Brand names and catalog numbers included in the equipment or material specifications are used to establish standards of quality and performance characteristics, not for the purpose of limiting competitive bidding.

1.03      DESCRIPTION

- A.      Indoor/Outdoor Explosion-proof microwave motion detector using the "Doppler" principle of transmitting a field of microwave energy into surveillance area so that an intruder's motion disturbs the field causing reflected signal to change
  - 1.      Microwave Sensor: The microwave sensor shall use the "Doppler" principle of transmitting a field of microwave energy into surveillance area so that an intruder's motion disturbs the field, causing the reflected signal to change. The microwave sensor portion shall contain two receiving channels and use the "Stereo Doppler" technique, whereby the two received signals shall be compared to determine whether motion is moving toward or away from the sensor. An intruder moving a short distance (dependent on the sensitivity setting) in one direction shall cause an alarm; however, incidental vibration or fluctuating movement of trees, bushes, swinging signs, etc. shall be rejected by the sensor's circuitry. The 10-position digital *Sensitivity Control Switch* shall adjust the microwave sensor detection sensitivity in 4" (10 cm) increments.
- B.      The microwave electronic assembly shall be configured to easily insert into a special explosion-proof enclosure suitable under the following classifications:
  - 1.      Class I, Div. 1 & 2, Groups C, D
  - 2.      Class II, Div. 1 & 2, Groups E, F, G
  - 3.      Class III
  - 4.      NEMA 7CD, 9EFG
- C.      Sensor's relay shall change state in response to intrusion, tamper, and component failure alarms.

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1.04

SYSTEM CRITERIA

- A. Detection range shall be adjustable.
- B. Detection sensitivity shall be adjustable.
- C. Sensor shall have the ability to ignore flying birds.
- D. Sensor shall have an adaptive signal processing for extreme environmental conditions.
- E. Circuit supervision shall cause a lock-in alarm condition with failure of a major component.
- F. Multiple sensors shall be usable in the same area without mutual interference.
- G. Sensor shall be equipped with Walk-Test and Environmental Caution Indicator lights with internal disable switch.
- H. Sensor shall be equipped with receptacle for plugging-in a sounder during set-up and walk-test.
- I. Sensor shall be equipped with Form C Relay with terminal connections.
- J. Sensor shall be equipped with Housing Tamper with terminal connections

PART II.

SPECIFICATIONS

2.01

DESCRIPTION

A. Operation	Alarm Output changes state when an intruder moves within protection pattern.
Standard Protection Pattern	SDI-77XL2-EX 100ft. x 40ft.
Power	8.5-20 VDC, 12 VDC Nominal
Current	150 mA @ 12 VDC (LED's Off)
Temperature	-30 to 130 degrees F(-34 to 54 degrees C)
Humidity	0 to 100% Relative Humidity
Wiring Access	½" pipe thread
Microwave Frequency Range	10,525 MHz USA International frequencies upon request
Relay	Form C, Solid State Relay
Relay Contact Rating	.1A, 50 V
Tamper	Contacts closed in normal condition.