ITI Interactive Technologies, Inc.
2266 North Second Street
North St. Paul, Minnesota 55109
Technical Services (800) 777-2624

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Doc # 46-329

Motion Sensor (DS923)
ITI Part # 60-364

A Passive Infrared (PIR) Sensor is designed to detect movement in the interior of an enclosed structure. The PIR Sensor adapts to the environment in which it is placed, and continually gathers information about that area. Any change in this stable environment caused by an object which emits a different degree of infrared heat energy is sensed and an alarm is generated.

When a PIR detects thermal movement, a "VIOLATION" signal is sent to the CPU. These signals are sent whether the CPU is armed or disarmed. A properly programmed PIR cannot prevent the system from arming.
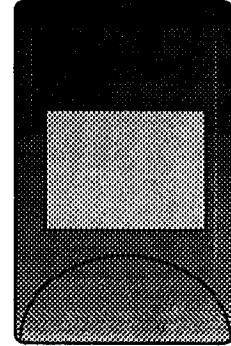
BATTERY POWER: The PIR uses a 3.5 VDC Lithium battery. Under normal conditions this battery will last 3 Years.

TEMPERATURE RANGE: 10°F TO 120°F

PIR sensors are SUPERVISED, i.e. they send a check in signal to the CPU every 69 minutes just like the DWS.

PULSE COUNT: A pulse count mode is provided on the transmitter circuit board. Refer to the DS923 Installations for more detail.

TEST FEATURES: A fast-reset LED walk light is pressing the Walk Test Activation switch. When pressed the PIR's LED indicates when the unit detects movement for 90 seconds. When in the LED mode the PIR will transmit every time the LED lights. There must be 10 seconds of inactivity between each test. *THE TEST MODE WILL TIMEOUT AFTER 90 SECONDS AND RETURN TO THE DETECTION MODE.*

TRANSMITTER LOCKOUT: In the Radio Mode the transmitter will transmit once, then "lockout" (i.e. not transmit again) unless the detector sees no motion for at least 3 minutes. Any movement prior to 3 undisturbed minutes causes this timer to reset and another 3 undisturbed minutes would be required before the unit will transmit.

INSTALLATION CONSIDERATIONS

- REFERENCE POINT - Mount the PIR so there is a reference point (such as a wall) at the end of its pattern.

- FOR BEST DETECTION - Mount these sensors so an intruder will most likely walk ACROSS the beams.

- PERMANENTLY MOUNT THE PIR - Do not simply set it on a shelf without screwing it down because the customer might move it and change its field of view.

- MOUNTING HEIGHT - Mount at between 5 and 8 feet high for best detection.

- PETS - If pets will be allowed in the PIR's field of view you must use the optional PIR lens for Pet Patterns. The down finger zones are eliminated, thus making it possible for pets to have access to the protected area.

- DON'T ATTEMPT TO MASK OFF ZONES - Instead select an optional lens to provide the desired coverage.

- LOCATION - Even though these PIR's are highly immune to false alarms you should follow these standard Passive Infrared locating guidelines:
    * Don't locate in direct sunlight.
    * Don't aim at air conditioners, heat vents, wood stoves, fireplaces, etc.
    * Don't aim at moving objects (curtains, etc).
    * Don't aim at solar heated walls or uninsulated metal walls.
    * Do attempt to mount on an outside wall facing in.
    * Do mount on a surface which is rigid and free from vibration.

As with any radio transmitter, avoid mounting on or near large metal objects such as a heat duct or foil wallpaper.

LENS REPLACEMENT

See the DS923 Installation Instructions included to replace lenses. Many lens options are available for the DS923 PIR. If you require a different detection pattern for your application, select the appropriate lens from the chart at right.
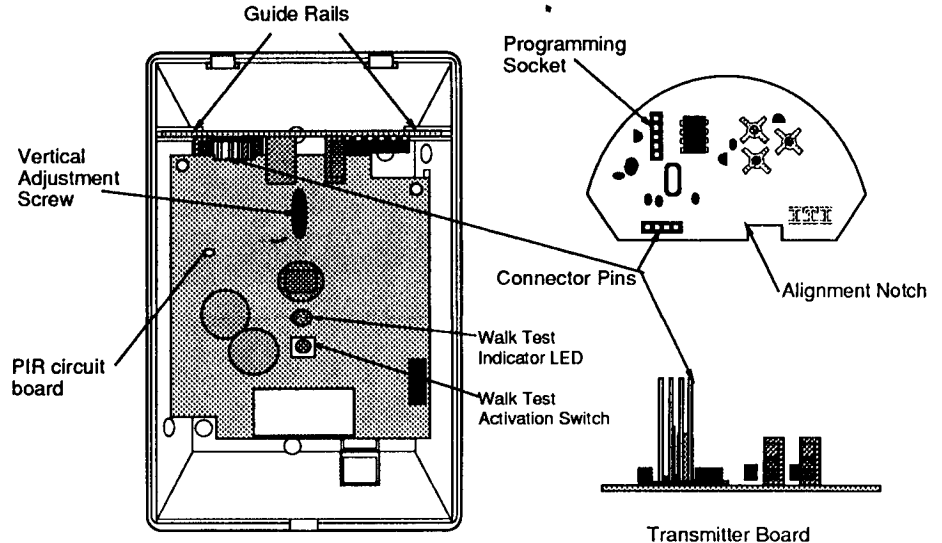
ITI Part #.	Pattern
13-167	Pet Avoidance
13-166	Long Range Barrier
13-168	110° Wide Angle

INSTALLATION

Install the PIR according to the Installation Instructions included with the DS923 detector.

TRANSMITTER INSTALLATION

The transmitter circuit board connects to the PIR circuit board by a 4 pin connector on the top of the PIR circuit board. You must remove the vertical adjustment screw on the PIR circuit board if you wish to remove the PIR or transmitter circuit board. You will notice the guide rails on either side of the PIR base that holds the semicircular transmitter board. To remove, simply slide the transmitter board away from the PIR board. To reinstall, position the transmitters connector pins into the PIR boards connector and slide on. When reinstalling, take note that the transmitter circuit board will have a fairly tight fit in the PIR case. If you have installed each board and the PIR case cover does not close easily, please check the position of both circuit boards.

Labels: Guide Rails, Programming Socket, Vertical Adjustment Screw, Connector Pins, Alignment Notch, PIR circuit board, Walk Test Indicator LED, Walk Test Activation Switch, Transmitter Board

PROGRAMMING

The programming cable for this PIR must be plugged in *backwards* (in relation to other ITI sensors) to program correctly. The open end of the programming cable must face *away* from the black chip. With the Handheld Programmer, program the PIR as a Motion Sensor, Type 2. *NOTE: The lockout option should not be used on a DS923 PIR.*

SX-V Programming
Typically the sensor number for an SX-V system will be numbers 60-67.

CareTaker Programming
For a Caretaker system use program level 9 or 10.
Program the house code.

RF Commander Programming
For an RF Commander system, program sensor number 12 or 13.
Program the house code.

Refer to the appropriate CPU installation manual for detailed sensor programming information.
       The detector board provides lockout when in the walk test mode.

TESTING THE PIR

Walk Test

A momentary switch on the detector board (refer to the DS923 installation instructions) enables a walk test LED. After pressing the switch, replace the cover and position the PIR as desired and wait at least 15 seconds for the PIR to stabilize. Then walk through the field of coverage as shown in the DS instructions and observe the LED. When the LED turns on, the transmitter will transmit the alarm signal to the CPU and the walk timer will restart. After the LED turns on, stay out of the field of coverage for 15 seconds before retesting. After approximately 75 seconds of NO ACTIVITY IN THE FIELD OF COVERAGE, the walk timer will flash the LED indicating the PIR is returning to the normal mode and is ready for service.
If rated range can not be achieved, try sliding the detector board up or down to assure the pattern is not aimed too low or too high (use the battery to slide the board up and down). Tighten the adjustment screw and replace the cover.

Final Test

Place the CPU in sensor test. When performing the sensor test remember to always wait at least three minutes between tests. Once the sensor has sent an alarm, you must wait three minutes to send another. *Do not enter the PIR field of view during this 3 minute time.* The lock out feature will prevent the PIR from sending alarms less than three minutes apart.

FCC NOTICE This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:
   1) this device may not cause harmful interference
   2) this device must accept any interference that may be received, including interference that may cause undesired operation.

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