Installation Instructions
for the
PIR Motion Detector
with POPIT Interface

1.0 Specifications

- **Input Power:** Connect to the Zonex Bus of the control panel.

- **Current Draw:** Less than 1.7 mA during alarm condition.

- **Standby Power:** There is no internal standby battery. Connect to DC power sources capable of supplying standby power if primary power fails. 1.7 mAh are required for each hour of standby time needed. Four hours minimum is required for then UL Listed requirements.

- **Coverage:**

Standard Broad	15 m by 15 m (50 ft by 50 ft)
Barrier (Optional):	24.4 m by 4.8 m (80 ft by 16 ft)
Long Range (Optional):	36.6 m by 3.1 m (120 ft by 10 ft)

- **Sensitivity:** Standard, Intermediate, or High

- **Tamper:** A tamper condition is signaled through the Zonex Bus and displayed at the keypads when the cover is removed.

- **Temperature:** The storage and operating range is -29°C to +49°C (-20°F to +120°F). For UL Listed requirements, the range is 0°C to +49°C (+32°F to +120°F).

- **Requirements:** Compatible Bosch Security Systems control panel with the POPEX Module installed.

- **Options:** B328 Gimbal Mount Bracket, B335 Low Profile Swivel Mount Bracket, Ceiling Mount Bracket, OMB77-3* Barrier Mirror, OMLR77-3* Long Range Mirror, and the TC6000 Test Cord.

    * Shipped in packages of three.

Note: When using an optional mounting bracket, detector misalignment can reduce range.

ï *Reading Bosch Security Systems, Inc. Product Date Codes*

For Product Date Code information, refer to the Bosch Security Systems, Inc. Web site at: http://www.boschsecurity.com/datecodes/

2.0 Programming

Program the address DIP switches as described for the control panel you are using.

Note: Place switch number 0 in the ON position when installing the ZX776Z with a D7212B1, D8112, or D9112B1.

The recommended point type programming is:

- D8112 = 7571

- D9112B1/D7212B1 = Point type 2, point response 2, no ring until restored

- D9412/D9112 = Point type 2, point response E, no ring until restored

Avoid
Direct Hot and Cold Drafts, Windows, Small Animals, Air Conditioner Outlets, Heat Sources, Direct Sunlight
Remember
Does not detect through glass. Best catch performance is across the pattern. When using two or more detectors, cross patterns for best coverage.

3.0 Mounting

- Select a location that is most likely to intercept an intruder moving across the coverage pattern. The recommended mounting height range is 2.0 m to 2.6 m (6.5 ft to 8.5 ft).

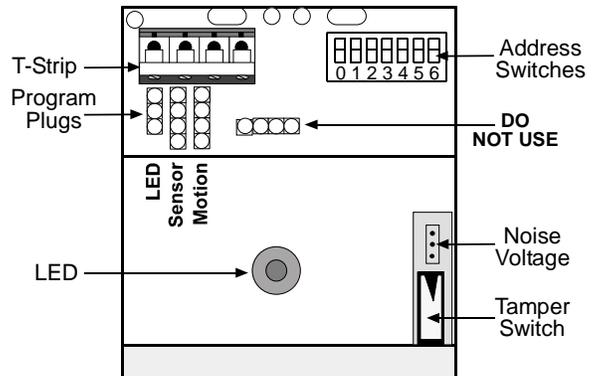**Note: Ensure the mounting surface is solid and vibration free.**

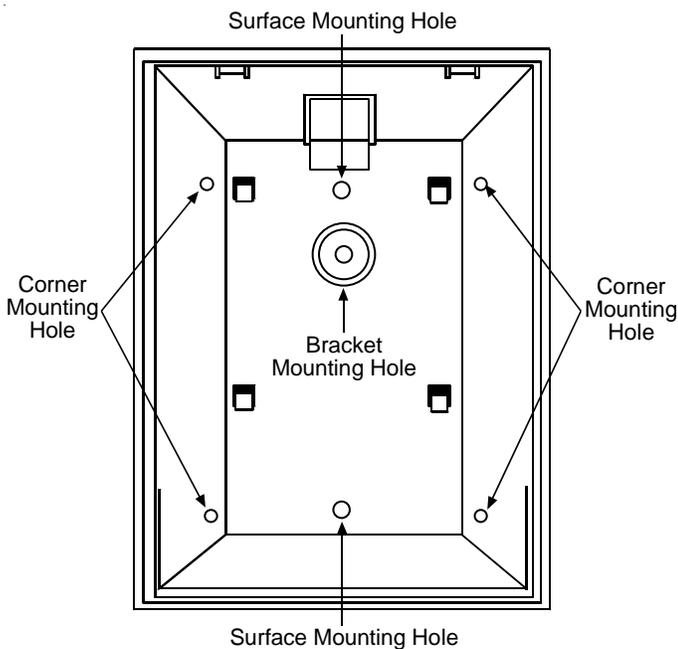

Figure 1: Circuit Board Components

BOSCH

Figure 2: Detector Enclosure (Rear View)

- Remove the cover. Insert a thin flathead screwdriver into the notch at the bottom of the cover and pry up.
- Remove the circuit board/mirror unit from the enclosure. Push the board/mirror unit toward the top of the enclosure until it clears its four retainer tabs, then lift it out.
- Open the knockout wire entrance and route the wiring through.

3.1 Surface or Corner Mounting

- Open two holes for surface or corner mounting.
- Mark the location for the mounting screws. Use the enclosure as a template. Pre-start the mounting screws.
- Firmly mount the detector.
- Replace the circuit board/mirror unit.

3.2 Mirror Alignment

Note: Touching the mirror surfaces can lead to performance degredation.

For the best performance, the mirror must be adjusted vertically for the maximum desired detection range (distance) and mounting height. The angle adjustment markings are located on both sides of the mirror (see *Figure 3*).

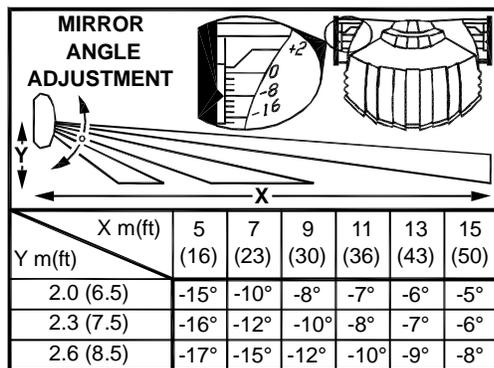| X m(ft) Y m(ft)	5 (16)	7 (23)	9 (30)	11 (36)	13 (43)	15 (50)
2.0 (6.5)	-15°	-10°	-8°	-7°	-6°	-5°
2.3 (7.5)	-16°	-12°	-10°	-8°	-7°	-6°
2.6 (8.5)	-17°	-15°	-12°	-10°	-9°	-8°

Figure 3: Mirror Alignment

- Adjust by sliding the mirror forward or backward until the angle adjustment markings are in line with the markers on each side of the frame.
- Use *Figure 3* to identify the correct vertical angle based on mounting height (X), mirror type, and maximum range (Y).
- Adjust the mirror horizontally by rotating (aiming) it from side to side.
- Walk test the unit as described in the *Section 6.0 Setup and Walk Testin*g.

4.0 Wiring

⚠ **CAUTION** **Only apply power after all connections are made and inspected.**

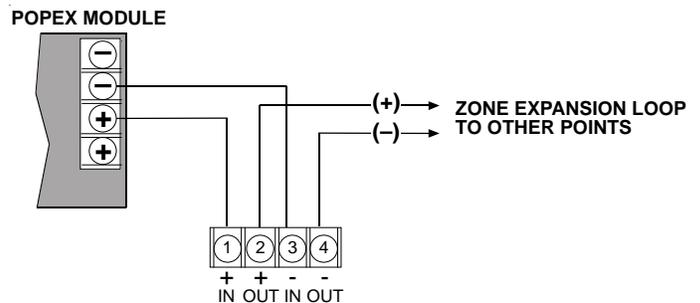Connect wiring as shown in *Figure 4*.

Figure 4: Wiring

4.1 Terminal Descriptions

1 (+), 2 (+), 3 (-), and 4 (-): Connect to the Zonex Bus of the control panel. Use no smaller than 0.8 mm (#22 AWG) wire between the detector and the control panel.

5.0 Program Jumpers

⚠ **CAUTION** **The LED is only for Walk Test. Disable the LED by turning Switch 1 off for normal operation. Failure to turn off the LED results in a Zonex malfunction.**

The following functions are controlled by various settings of the program jumpers:

- **LED Operation:**
    - **ON:** Allows the LED to operate when activated by alarm.
    - **OFF:** The LED does not operate on alarm.

- **Sensitivity Mode:**
    - **Standard:** Recommended setting for maximum false alarm immunity. Tolerates environmental extremes on this setting. Not recommended for Long Range or Barrier type patterns. The detector is shipped in Standard Sensitivity Mode.
    - **Intermediate:** Recommended setting for any location where an intruder is expected to cover only a small portion of the protected area. Tolerates normal environments on this setting. This setting improves your intruder catch performance.
    - **High:** Setting for fast response to intruder signals. For use in quiet environments where thermal and illumination transients are not anticipated.

- **Motion Monitor:**

  Set for the desired motion monitor time (see *Figure 5* and *Section 8.0 Motion Monitor Supervision*). The detector is shipped with the Motion Monitor jumper in the OFF position.
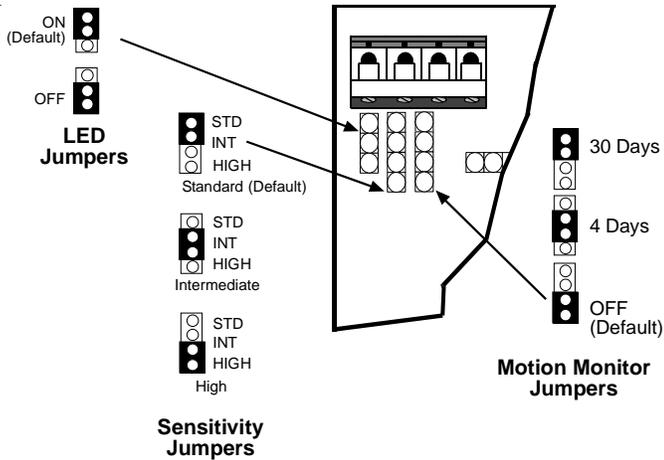
ON (Default)

OFF

LED Jumpers

STD
INT
HIGH
Standard (Default)

STD
INT
HIGH
Intermediate

STD
INT
HIGH
High

Sensitivity Jumpers

30 Days

4 Days

OFF (Default)

Motion Monitor Jumpers

Figure 5: Jumper Locations

6.0   Setup and Walk Testing

⚠ **CAUTION**

The LED is only for Walk Test. Disable the LED by turning Switch 1 off for normal operation. Failure to turn the LED off will result in a Zonex bus malfunction.

- Apply power to the unit.
- Wait approximately 3 min. with no motion in the coverage area for the detector to setup.
- Walk test across the coverage pattern. LED activation determines the edge of coverage.
- Walk test the unit from both directions to determine the boundaries.
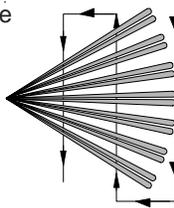
7.0   Final Tests

- Connect a DC VOM to the noise voltage pins.
  - Set the meter scale for about 5 VDC (use TC6000).

- The base reference level for reading background noise is approximately 2 VDC.

  -W
  +R
  -B
  TC6000

  - Installations in quiet environments result in a steady meter reading between 1.9 VDC and 2.1 VDC.
  - Voltage changes greater than 0.75 VDC from the reference level are desirable for good catch performance.
  - If changes are less than +0.75 VDC, the device might not respond if the temperature between the intruder and the background is minimal.

- Turn on all heating and cooling sources that are normally in operation during times of protection.
  - Stand away from the unit and outside the coverage pattern, then monitor the background noise for at least 3 min.
  - Readings should not deviate from the reference level more than ±0.15 VDC.
  - For readings outside these limits, eliminate the cause, re-point the unit slightly, or mask off the affected zones.
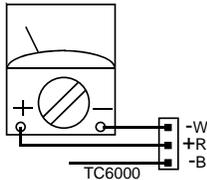
8.0   Motion Monitor Supervision

The Motion Monitor Supervision feature verifies the detector has a clear view of the detection area.

When selected, a supervision timer is activated. A trouble condition is indicated if the detector has not alarmed at least once during the selected time period. This feature can be disabled by placing the Motion Monitor plug in the OFF position.

Note: The time period selected should be long enough to allow adequate time for holiday weekends.

LED	Cause
On	Unit alarm
Two flashes	Motion Monitor Timeout
Four flashes	PIR Self Test Failure (detector needs replacement)

Table 1: LED Response

9.0   Other Information

- **Maintenance:** Regularly check the range and coverage according to *Section 6.0 Setup and Walk Testing*. Refer to the *9000 Series User's Guide* for the procedure on performing a Walk Test. Performing a Zone Test regularly assures an alarm output prior to arming the system.
- **Sealing the wire entrance:** Use the foam plug (provided) to seal the wire entrance from drafts and insects after installation.
- **Mirrors:** Change the mirror by pulling it out from its resting grooves.

Note: Excessive handling of the mirror surfaces can lead to performance degradation.
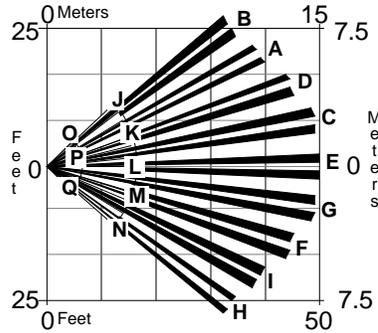
10.0 Coverage Patterns

This product is factory assembled with the look down zones (O, P, and Q) masked out. If you want to use these zones, remove the masking tape from the lens.
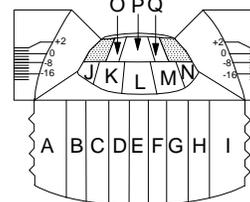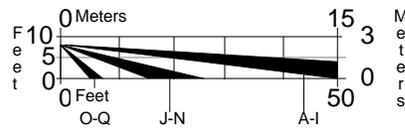
Remove the mask by peeling back the tab.

J K L M N

A B C D E F G H I
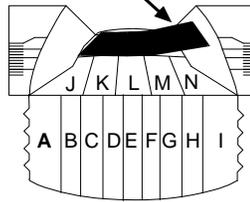
Broad Coverage
Top View

Mirror Segment
to Pattern Reference
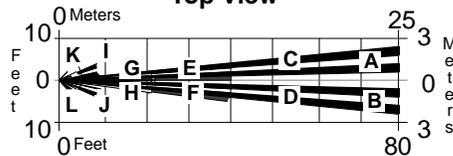
O P Q

J K L M N

A B C D E F G H I

View of Front
Polished Surface

Side View

Mirror adjusted to -5°

Barrier Coverage (OMB77)
Top View

Mirror Segment
to Pattern Reference

K L

I J

G H

E   F

C   D

A   B
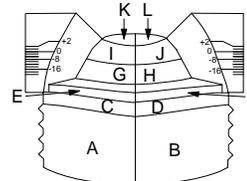
View of Front
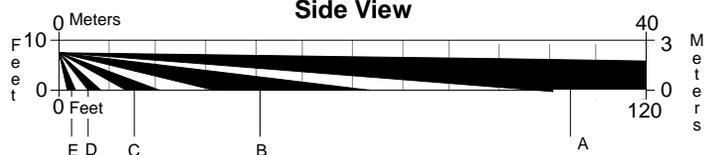Polished Surface
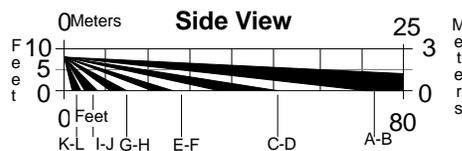
Side View

Mirror adjusted to -2°

Long Range Coverage (OMLR77)

Top View

Side View

Mirror adjusted to -1°

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