

INSTALLATION INSTRUCTIONS



MOTION DETECTOR

GENERAL INFORMATION

The Rx4 motion detector offers the ultimate in performance with an unsurpassed combination of detection and false alarm immunity. Optimal operation is assured with the following advanced features:

- Microprocessor-based algorithms for advanced detection & false alarm immunity processing
- Ademco's patented Alternate Polarity Quad detector for improved false alarm immunity
- Immune to pets and other animals up to 45 lbs.
- Automatic adaptation to environmental disturbances
- Advanced dual-slope temperature compensation
- Dual channel supervision that reverts to single channel operation when a failure in the other channel is detected
- Zone-locating walk-test mode

This detector includes a standard wide angle mirror (installed), and an interchangeable long range/curtain mirror. The optional 1875PA pet alley mirror is also available. Optional swivel mounting brackets are available under part number 998SB and Quest-SB2.

CHANGING THE MIRROR

1. Remove front cover by inserting a screwdriver blade in the groove between the cover and base along the bottom edge and twisting.
2. Spread either or both plastic prongs holding the wide angle mirror, and remove the mirror. See Fig. 2 for location of prongs.
3. Insert one side of the long range/curtain mirror under a prong, and snap the other side under the other prong. Make sure the mirror sides are squarely in their corner rests and are held securely under the prongs.

NOTE: Mirror surface should be free of dirt, foreign matter and fingerprints. Use a soft, dry cloth to wipe mirror surfaces, if required.

MIRROR MASKING

Use the supplied masking strips to produce a protection pattern that suits the particular requirements of the protected area, or to eliminate coverage from areas where you anticipate environmental disturbances that might reduce the PIR's stability (a heater or other heat-producing object for example).

Simply peel off the appropriate pressure-sensitive strip(s) and apply over the desired mirror segment(s). Each masked mirror segment eliminates one zone of protection from the coverage pattern. For convenience, the masking strips may be placed on the white filter material covering the upper tier, instead of on the mirror itself.

SPECIFICATIONS

Detection Method	Passive Infrared
Coverage	
Wide Angle Mirror	35' x 45' (10.6m x 13.7m)
Long Range/Curtain Mirror ..	70' x 10' (21.3m x 3m)
Detection Zones	
Wide Angle Mirror	9 zones (6 long, 3 short)
Long Range/Curtain Mirror ..	1 zone, 7 tiers
Pulse Processing	Standard or Intermediate, selectable via DIP switch
Detectable Walk Rate	0.5-5ft/sec (.15-1.5m/sec)
Mounting Height	7 ft (2.1m) nominal
Indicator	Red LED; enabled/disabled via DIP Switch
Alarm Relay	Form A, N.C., 16VDC, 0.13A max. with 15Ω protective resistor
Input Voltage	9-16 VDC with reverse polarity protection
Current at 12V	12 mA nominal (non-alarm) 8 mA nom. (alarm, LED disabled) 16 mA nom. (alarm, LED enabled) 16 mA nom. during warm-up
Standby	Power source should be capable of at least 4 hours of battery standby
Operating Temp.	-20°F to 122°F (-29°C to +50°C) [0°C to +50°C for UL installations]
Operating Humidity	Up to 95% RH (max.) non-condensing
Dimensions	2-5/8"W x 4-3/8"H x 1-7/8"D (67mm x 111mm x 48mm)

MASKING NOTE: The segment opposite the zone to be eliminated is the correct one to mask. For example, to eliminate the rightmost zone, mask the leftmost mirror segment.

COVERAGE PATTERNS

Figure 1 shows protective patterns for a nominal mounting height of 7 ft (2.1m).

Best coverage will be obtained when the mounting site is selected so that the likely direction of the intruder is across the pattern of the detector.

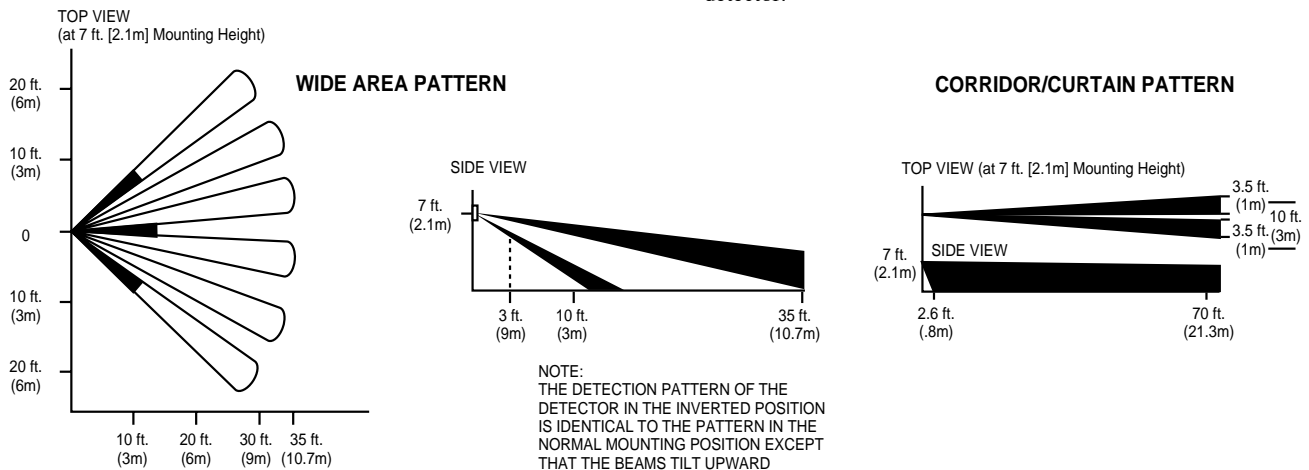


Figure 1. Coverage Patterns

OPTIMIZING PET IMMUNITY

The Rx4 provides reasonable protection from nuisance alarms caused by pets or animals up to 45 pounds if the following guidelines are followed:

- Mount the center of the detector at 7 feet high.
- Set the sensitivity to Standard (STD).
- Mount where animals cannot come within 6 feet of the detector by climbing on furniture, boxes or other objects.
- Do not aim the detector at stairways that can be climbed by the animal.

WALL OR CORNER MOUNTING

Mount the unit to a firm vertical surface. The wall wiring hole should be no more than 5/16" (8mm) diameter.

1. Remove the front cover and PC board.
2. Referring to Figure 2, break out the desired knockout mounting holes. Use knockout holes "A" for normal surface mounting. Use knockout holes "B" for corner mounting. Break out the desired wire entry hole marked X1 or X2 at the top of the detector base.
3. Feed wiring emerging from the wall through the wire access hole.
4. Mount the base and reinstall the PC board.
5. Refer to WIRING CONNECTIONS section before replacing the cover.

OPTIONAL CEILING MOUNTING

The versatility of this detector permits optional ceiling mounting, using the Long Range/Curtain mirror. This provides a 15-20ft (4.5-6m) forward-looking curtain pattern as shown in Figure 3. The mounting procedure is the same as for "Normal Wall Mounting," except that the unit is ceiling mounted, **with the unit facing toward the detection area.**

WIRING CONNECTIONS

1. Bring all wires through the wire access slot at the top of the detector base near the terminal block, and connect to the screw terminal. See Figure 4 for terminal designations.
2. Seal any openings in the base with foam or RTV (not supplied) to prevent drafts and insects from entering the unit.
3. Apply power only after all connections have been made and inspected.

DIP SWITCH SETTINGS

Use the DIP switch to select Walk Test/ Normal mode and Pulse Processing options. Use a small pointed tool to move the switch handles OFF or ON as desired.

Normal/ Walk Test Mode: DIP position 1

- OFF = Normal Mode
- ON = Walk Test Mode (See TEST PROCEDURES section for description)

Pulse Processing Option: DIP position 2

- OFF = Standard Pulse Processing
Recommended setting for maximum false alarm immunity. It tolerates environmental extremes on this setting.
- ON = Intermediate Pulse Processing
Recommended setting for locations where an intruder is expected to cover only a small portion of the protected area. It tolerates normal environments on this setting. Use this setting with the Long Range/Curtain mirror.

LED Enable/Disable Option: DIP position 3

- OFF = Enable the LED
- ON = Disable the LED

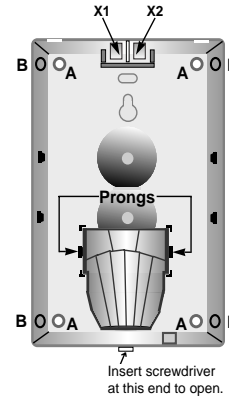


Figure 2. Back Case with Mirror

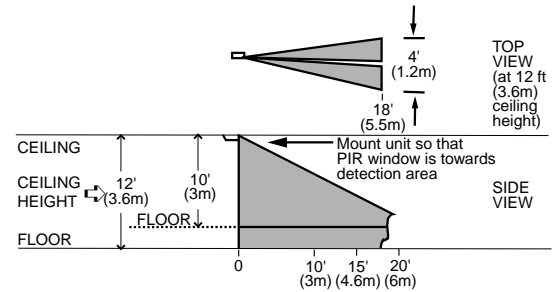


Figure 3. Detection Area with Ceiling Mounted Unit Using Long Range (Curtain) Mirror

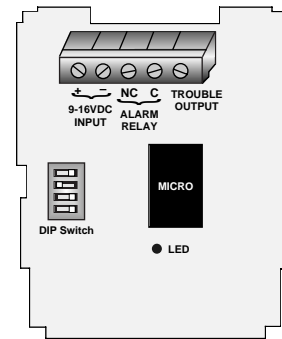


Figure 4. Wiring Details

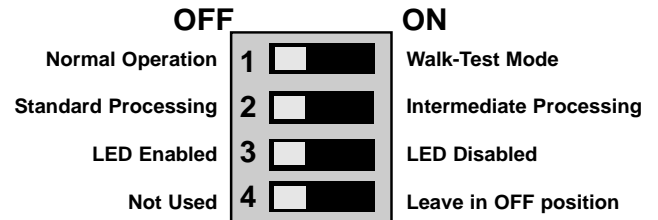


Figure 5. DIP Switch Functions

SUPERVISION

This detector provides advanced dual channel supervision and a trouble output terminal. If a failure is isolated to only one of the two quad channels, the detector will continue to operate as a dual element PIR. Continued single channel operation can be verified by walk-testing with the LED enable. Even though some operation is maintained, the unit should be replaced as soon as possible.

If a supervision failure occurs, the LED will flash every 2 seconds, regardless of the selected LED enable/disable option. If the unit has defaulted to single channel operation as a dual element PIR, the LED will light when an alarm occurs if the LED is enabled.

Upon supervision failure, the open collector TROUBLE OUTPUT terminal will go low (requires 1000-ohm pull-up resistor). Use shielded wire for UL installations.

NOTE: Walk-Test Mode is non-functional during single channel operation.

TEST PROCEDURES

Before testing, wait until power warm-up is complete and the LED extinguishes, about 30 seconds. If the LED begins to flash at a constant rate, refer to the SUPERVISION paragraph.

NOTE: The relay is held CLOSED during the warm-up period.

Walk-Test Mode

A unique walk-test mode may be used to precisely locate the edges of each zone. To utilize this feature, do the follow:

1. Remove the front cover and set DIP switch 1 to ON to enter Walk-Test Mode.

NOTE: The alarm relay is held OPEN while in the Walk-Test Mode to prevent accidentally leaving the unit in this mode.

2. Replace the front cover and walk through the protected area. The LED will flash briefly each time a protective zone is entered or exited.
3. To exit the Walk-Test Mode, set DIP Switch 1 to OFF.

Testing in Normal Operating Mode

After using the Walk-Test Mode, the detector should be tested in the Normal Operating Mode by doing the following:

1. Remove the front cover and check that DIP Switch 2 is set to the Pulse Processing Option that will be used for this installation.
2. Enable the LED by setting DIP Switch 3 to OFF.
3. Replace the front cover and walk through the protective zones, observing that the detector's LED lights whenever motion is detected.

NOTE: The relay will open when the LED lights.

4. After walk-testing is complete, the LED may be disabled, if desired (set DIP Switch 3 to ON).

MAINTAINING PROPER OPERATION

In order to maintain the detector in proper working condition, it is important that the following be observed by the user:

1. **Power should be on at all times.** Loss of power to the unit results in the alarm contacts reverting to an alarm state. The unit's DC source should provide backup power for at least 4 hours of operation during emergencies.
2. **Units should never be re-aimed or relocated** without the advice or assistance of the alarm service company.
3. **The physical surroundings of the protected area should not be changed.** If furniture or stock is moved, or air conditioning or additional heating is installed, the system may need readjustment by the alarm service company.
4. **Walk-tests should be conducted frequently** (at least weekly) to confirm proper coverage by each detector.

THE LIMITATIONS OF YOUR PASSIVE INFRARED MOTION DETECTOR

While the Intrusion Detector is a highly reliable intrusion detection device, it does not offer guaranteed protection against burglary. Any Intrusion Detection device is subject to compromise or failure to warn for a variety of reasons:

- Passive Infrared Motion Detectors can only detect intrusion within the designed ranges as diagrammed in this installation manual.
- Passive Infrared Motion Detectors do not provide volumetric area protection. They do create multiple beams of protection, and intrusion can only be detected in unobstructed areas covered by those beams.
- Passive Infrared Detectors cannot detect motion or intrusion that takes place behind walls, ceilings, floors, closed doors, glass partitions, glass doors, or windows.
- Mechanical tampering, masking, painting or spraying of any material on the lenses, windows or any part of the optical system can reduce the detection ability of the Passive Infrared Motion Detector.
- Passive Infrared Detectors sense changes in temperature; however, as the ambient temperature of the protected area approaches the temperature range of 90° to 105°F (32° to 40°C), the detection performance can decrease.
- This Passive Infrared Detector will not operate without appropriate DC power connected to it, or if the DC power is improperly connected (i.e., reversed polarity connections).
- Passive Infrared Detectors, like other electrical devices, are subject to component failure. Even though this equipment is designed to last as long as 10 years, the electronic components in it could fail at any time.

We have cited some of the most common reasons that a Passive Infrared Motion Detector can fail to catch intrusion. However, this does not imply that these are the only reasons, and therefore it is recommended that weekly testing of this type of unit, in conjunction with weekly testing of the entire alarm system, be performed to ensure that the detectors are working properly.

Installing an alarm system may make the owner eligible for a lower insurance rate, but an alarm system is not a substitute for insurance. Homeowners, property owners and renters should continue to act prudently in protecting themselves and continue to insure their lives and property.

We continue to develop new and improved protection devices. Users of alarm systems owe it to themselves and their loved ones to learn about these developments.

ADEMCO SIX YEAR LIMITED WARRANTY

Alarm Device Manufacturing Company, a Division of Pittway Corporation, and its divisions, subsidiaries and affiliates ("Seller"), 165 Eileen Way, Syosset, New York 11791, warrants this PIR detector to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for 72 months from the date stamp control on the product. Seller's obligation shall be limited to replacing, at its option, free of charge for materials or labor, a detector which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the detector is altered or improperly repaired or serviced by anyone other than Ademco factory service. In case of defect, return the detector to ADI or an authorized Ademco distributor for an immediate replacement.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO CASE SHALL SELLER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, OR UPON ANY OTHER BASIS OF LIABILITY WHATSOEVER, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

Seller does not represent that its detector may not be compromised or circumvented; that the detector will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the detector will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, fire or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result. **CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE DETECTOR FAILED TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARDLESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE DETECTOR, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER.** This warranty replaces any previous warranties and is the only warranty made by Seller on this detector. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.

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GROUP**

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