# AP950PI PIR Detector Installation Instructions

Description

The AP950PI is a passive infrared motion detector that is highly sensitive to moving infrared sources. It features superior immunity to RFI, vibration, static electricity, temperature changes, and other false alarm sources.

The unit provides jumper-selectable sensitivity, mode, and LED settings. The unit is designed to accept either the pet immune or the standard mirror. The masks included allow the coverage pattern to be modified for a wide variety of applications.

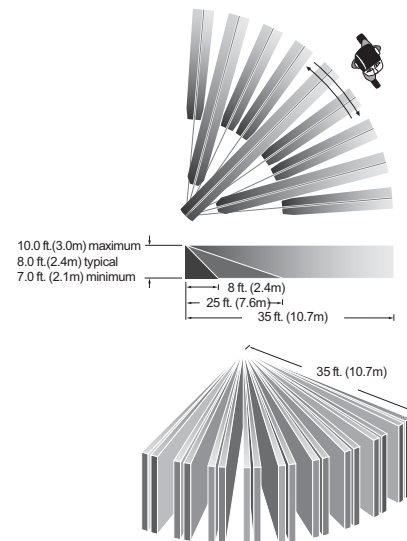**Figure 1: Exploded view**
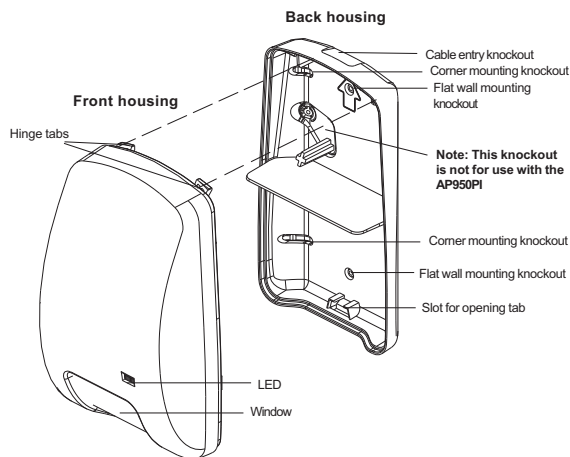
Parts

The following parts are included:

- PIR detector with pet immune mirror installed
- Standard mirror
- Two plastic masks
- Sheet of adhesive masking labels
- Cardboard undercrawl window mask
- One screw to secure the housings

Figure 2: Detections pattern

Note: The maximum range is 35 feet (10.7m) with pet immune mirror and Standard Sensitivity selected. The maximum range is 50 feet (15.2m) with standard mirror and Increased Sensitivity selected. See "Setting the sensitivity, mode, and LED jumpers" on page 3.

Selecting a location

- The unit can be mounted from 7 to 10 feet (2.1 to 3.0m) high except for pet alley application (see *Pet Alley Application)*, but for optimum detection and pet immunity, mount the unit between 7 and 8 feet (2.1 and 2.4m) high.
- Mount the unit on a rigid vibration-free surface.
- Mount the unit so the expected movement of an intruder is across the fields of the detection pattern. See Figure 2 above.
- Do not locate the unit on a surface exposed to moisture.
- Do not locate the unit where it may be exposed to false alarm sources, such as:

  - direct sunlight
  - heat sources (heaters, radiators, etc.) in the field of view
 - strong air drafts (fans, air conditioners, etc.) on unit

- Do not locate the unit where the ambient temperature is below 0° F (-18°C) or above 122°F (50°C).

- Do not aim the unit at windows or glass doors.

Caution: You must be free of static electricity before handling sensor circuit boards. Touch a grounded, bare metal surface before touching circuit boards or wear a grounding strap.

Mounting and wiring the detector

1. Separate the front housing from the back housing by pressing in on the opening tab at the bottom of the unit with a small, flat bladed screwdriver. See Figure 3 below.

2. Select and remove the appropriate corner or flat wall mounting knockouts and the cable entry knockout on the back housing. See Figure 1 on page 1.

3. Strip the cable 2 inches (5cm) and pull it through the cable entry knockout. Use screws and wall anchors, if necessary, to attach the back housing to the wall. Do not overtighten.

4. Select the appropriate coverage pattern. See "Selecting the coverage pattern" below

Figure 3: Front housing interior
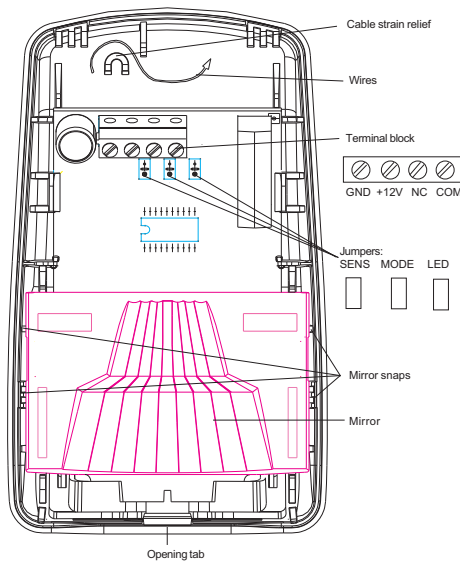
5. Set the sensitivity, mode, and LED jumpers for the application desired. See "Setting the sensitivity, mode, and LED jumpers" on page 3.

6. Strip 1/4 inch (0.6cm) of insulation from each wire.

7. Insert each wire into the appropriate terminal and tighten screws. Push the wires into the strain relief. See Figure 3 above.

8. To close the unit, insert the hinge tabs at the top of the front housing into the slots at the top of the back housing then swivel the front housing toward the back housing to snap the unit closed. See Figure 1 on page 1.

9. Fasten the housings together with the screw provided.

Selecting the coverage pattern

The coverage pattern for the unit can be modified to fit specific applications by masking off mirror curtains. Curtains should be masked to avoid sources of false alarms, such as heaters, air conditioners, and windows.

Remove the mirror by inserting a small screwdriver between the mirror and the side of the front housing and gently prying the mirror out. Do not pry from the end of the housing because the mirror may be scratched. See Figure 3 above.
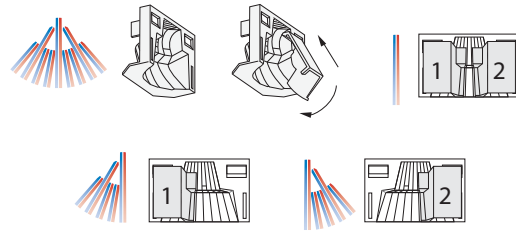
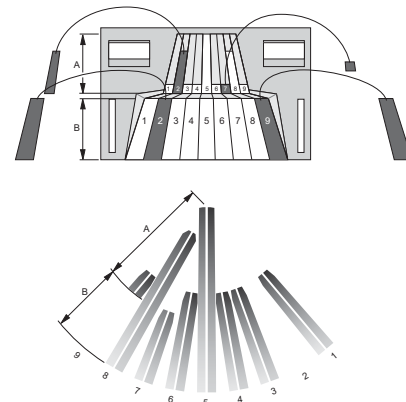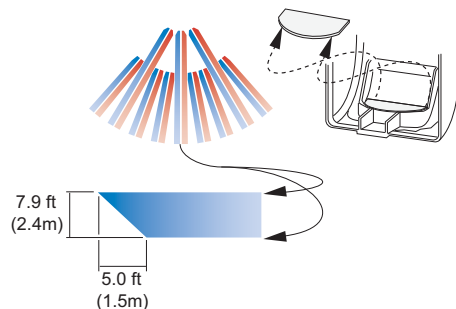**Figure 4: Plastic masks**

Figure 5: Adhesive labels

Figure 6: Cardboard undercrawl window mask

Setting the sensitivity, mode, and LED jumpers

The unit provides three jumpers to set sensitivity, mode, and the LED. See Figure 3 on page 2.

Figure 7: Sensitivity

Standard Sensitivity (factory default) - Reduces sensitivity and range for use with the pet immune mirror. Range = 35 feet (10.7m). Both pins must be covered to place the unit in Standard Sensitivity.

Increased Sensitivity - Increases sensitivity and range for use with the standard mirror. Range = 50 feet (15.2m). Either pin can be uncovered to place the unit in Increased Sensitivity.

Figure 8: Mode

BI= Bi-Curtain Mode (factory default). Increases false alarm immunity in smaller areas. Requires the intruder to pass through two curtains to trigger an alarm. Do not use for single curtain applications or ranges under 5 feet (1.5m). Both pins must be covered to place the unit in Bi-Curtain Mode.

STD= Standard Curtain Mode. Use for wide-angle or single-curtain applications. Requires the intruder to only pass through one curtain to trigger an alarm. Either pin can be uncovered to place the unit in Standard Curtain Mode.

Note: Operation of the AP950PI in the Standard Curtain Mode is UL 639 Listed for a range of 35 feet (10.7m) with both mirrors in Standard Sensitivity, and for a range of 50 feet (15.2m) with the standard mirror in Increased Sensitivity. For operation in Bi-Curtain Mode, the unit is UL 639 Listed for 30 feet (9.1m) range only. For ranges from 30 to 50 feet (9.1 to 15.2m) with sensitivity set to Increased and Bi-Curtain mode, the unit is not UL 639 Listed but will provide detection within 6 steps or 14 feet (4.3m) across the plane of coverage. UL has not tested the 6 steps or 14 foot (4.3m) detection.

Figure 9: LED

To enable the LED (factory default), both pins must be covered by the jumper.

To disable the LED, either pin can be uncovered.

Note: The LED only lights if an alarm occurs and the jumper is covering both pins.

Pet immunity

When mounted properly, the unit provides false alarm immunity to dogs and similar animals. The size and body temperature of the animal, which depends on the length of the animal's coat, affects the immunity to false alarms. Dogs vary in body temperature by breed. A very warm-blooded dog with short hair will not be as immune to false alarms as a similar dog with long hair. Therefore, the acceptable short hair dog is limited to a lighter weight dog. See the examples listed in the following table:

Long hair (2" long) up to 80 lbs.	Medium hair (1.5" long) up to 50 lbs.	Short hair (1" long) up to 30 lbs.	Not recommended use pet alley application
Chow Chow	Collie	Welsh Corgi	Doberman
Husky	English Setter	Border Terrier	Great Dane
Standard Poodle (uncut)	Border Collie	Cocker Spaniel	Greyhound
Retriever	Springer Spaniel	French Bulldog	Mastiff
Sheepdog	Shetland Sheepdog	Pug	Pit Bull
Shepherd		Cats	
Malamute			

Note: To reduce false alarms, keep animals off the furniture and avoid aiming the unit at stairs.

Pet immunity not verified by UL.

Pet alley application

To create a detection-free area close to the floor, mount the unit 3.5 feet (1.1m) above the floor, upside down (detector window towards the ceiling). Use the standard mirror and set the J2 jumper for Increased Sensitivity (both pins cannot be covered). The cardboard undercrawl window mask should be in place to reduce exposure to the ceiling.

As shown in Figure 10 on page 4, pets are free to roam below the mounting height of the unit without causing alarms.

Note: Operation of the AP950PI in the Standard Curtain Mode or in the Bi-Curtain Mode is UL 639 Listed for the pet alley application at a mounting height of no more than 3.5 feet (1.1m) with a range of 30 feet (9.1m). For ranges greater than 30 feet (9.1m) or mounting heights higher than 3.5 feet (1.1m), the unit is not UL 639 Listed.

Figure 10: Pet alley
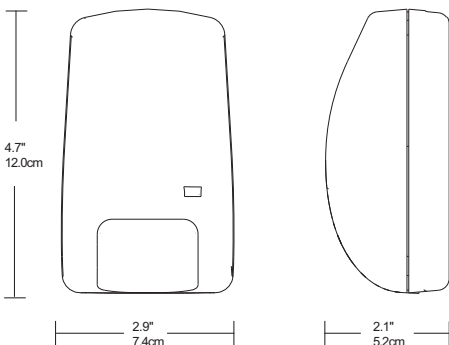

3.5 ft. (1.1m)
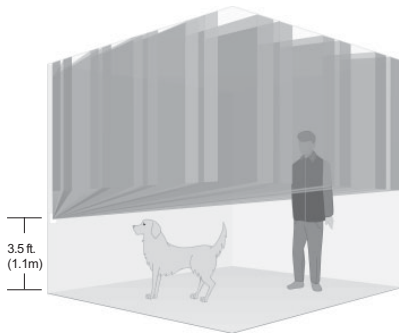
Operational information

When the unit is powered up, the LED turns on and the relay contacts open for about 12 seconds, then the LED goes off and the relay contacts close. Thereafter, the LED will turn on and the relay contacts will open every time an alarm occurs. The unit should be allowed to settle for at least one minute after power-up before walk testing. When walk testing, walk across the curtains, not directly toward or away from the unit. Wait 10 seconds between trips to allow the unit to stabilize.

Maintaining the detector

When installed and used properly, the AP950PI provides many years of service with minimal maintenance. To ensure proper operation, you should walk test the unit annually.

Clean the inside of the unit with a soft bristled brush or compressed air. Clean the outside with a damp (water) cloth as needed to keep it free of dust and dirt. **Always test the unit after cleaning.**

Figure 11: Dimensions

4.7" 12.0cm

2.9" 7.4cm

2.1" 5.2cm

Specifications

Input voltage	8.2 to 15VDC
Input voltage (UL)	9.7 to 13.6 VDC
Peak to peak ripple	2V max at 12VDC
Current consumption	17mA max
Mounting height	7' to 10' (2.1m to 3m)
Relay contacts	50 mA max at 28V
Relay type	Closed loop (Form A)
Alarm time (LED and relay)	2.9 to 3.5 seconds
Operating temperature	0° to 122° F (-18° to 50° C)
Relative humidity	93% non-condensing
RFI immunity	20V/meter from 28 to 1000MHz
Weight	0.26 lbs (120 g)
Dimensions: Width Depth Height	2.9" (7.4 cm) 2.1" (5.2 cm) 4.7" (12.0 cm)
Number of curtains	9
View angle	89°
Detection range	50' (15.2m) with standard mirror and sensitivity set to Increased 35' (10.7m) with pet immune mirror and sensitivity set to Standard

Regulatory information

Listings   C-UL US

Product ordering

Model #	Description
AP950PI	PIR, closed loop, Form A, 35 foot (10.7m) pet immune mirror installed, 50 foot (15.2m) standard mirror included.

Contact information

www.utcfireandsecurity.com or www.interlogix.com

For customer support, see www.interlogix.com/customer-support

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