

JET

Passive Infrared Detector



Installation Instructions

1. INTRODUCTION

The JET is a highly compact passive infrared detector designed for top-notch performance and high immunity against false alarms. It can be surface-mounted or corner-mounted, and has a soft-featured, streamlined shape that blends into most interior decors.

The JET is especially notable for its dual creep zone lens with 4 beams and also for its efficient temperature compensation circuitry, incorporated to stabilize the detection range over a wide range of

operating temperatures. The pyroelectric sensor is enclosed in a sealed chamber, protected from insects and air drafts. Four lenses are available, for a variety of residential and commercial applications. The appropriate lens must be selected according to the area to be covered. Coverage patterns are shown in Figure 1.



2. SPECIFICATIONS

OPTICAL

Detection Patterns: See Figure 1

Adjustment: Vertical +2° to -12° calibrated scale.

Creep Zones: Two look-down creep zone lenses provide 4 creep zone beams.

ELECTRICAL

Voltage: 9 to 16 VDC.

Current: 17 mA at 12 VDC, 21 mA at 16 VDC.

Alarm Output: Normally closed (fail-safe) contacts. 18-ohm resistor in series with contacts. Rating - 0.1 A resistive/30 VDC.

Tamper Output: Normally closed. Rating 50 mA resistive/30 VDC.

Alarm Period: 2-3 seconds.

Pulse Counter: 2 position selector, 1 or 3 pulse operation.

LED: Walk Test, enabled or disabled with internal link.

Detector: Dual-element low noise pyroelectric sensor.

MOUNTING

Flat or corner mounting (no additional brackets required).

Mounting Height: Up to 3.6 m (12 ft).

Optional Swivel Brackets: See Para. 3.6.

ENVIRONMENTAL

Operating Temperature: -10°C to 50°C (14°F to 122°F).

Storage Temperature: -20°C to 60°C (-4°F to 140°F).

RFI Protection: Greater than 30V/m to 1000 MHz.

PHYSICAL

Dimensions: 110 x 45 x 34 mm (4-5/16 x 1-3/4 x 1-5/16 in.).

Weight: 68 g (2.4 oz).

Color: White.

MODELS AVAILABLE

JET: Standard model

JET M: With memory (not U.L. listed)

JET VDS: With memory and remote LED control (not U.L. listed).

PATENTS

U.S. Patent: Des. 356,748

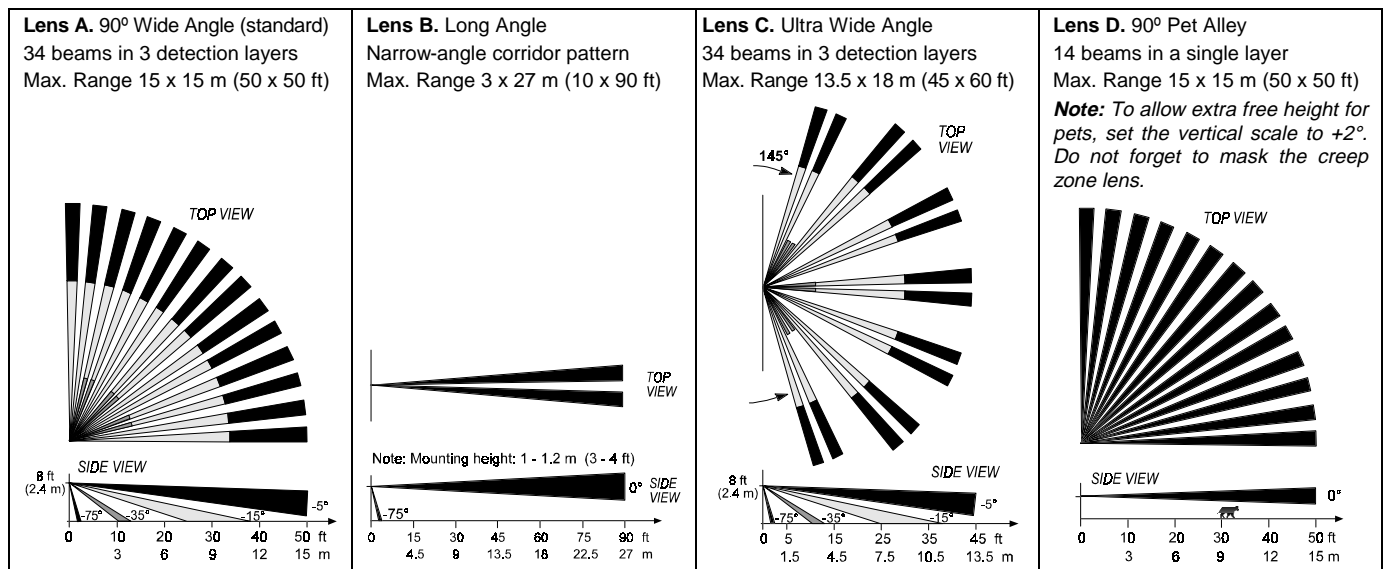


Figure 1. JET Coverage Patterns

3. INSTALLATION

3.1 Changing Lenses

To change a lens, refer to Figure 2 and proceed as follows:

- Remove the screw at the bottom. Pull the lower part of the cover slightly forward and remove the cover.
- Hold the lens cover in both hands with the creep zone lens away from you.
- Flex the edge of the cover near the lens holder sideways with one thumb, while inserting the other thumb into the sensor enclosure

and pressing in the opposite direction. Once the lens holder snaps free of one side-locking tab, it will remove easily.

- Release and remove the old lens by bending one of its side edges slightly inward with a small screwdriver.
- Insert the new lens with the smooth surface outside and the lens designation letter positioned as in Fig. 2. Push the lens in until it snaps into place.
- Position the lens holder correctly and insert its left edge under the left side-locking tab. Then push the right edge in until it snaps shut.

3.2 Mounting

The unit can be surface mounted directly on a wall or in a corner.

Position the unit with the creep zone lens facing down. The main lens will thus be located in the lower part of the front cover. Always mount on a firm and stable surface and seal the wire entry holes with RTV after wiring.

A. Mount the unit so that the expected intruder's motion will cross the beams of the coverage pattern.

B. Select the most convenient mounting height - you may mount the unit anywhere up to 3.6 m (12 ft) height. An accurate adjustment table (see Para. 3.4) helps you set the vertical adjusting scale.

Note: When using the pet alley lens, the detector should be mounted at the height of 1.2 - 1.35 m (4 - 4.5 ft) - at least 30 cm (1 ft) above the pet's activity - with the scale set to +2°, and the creep zone lens masked to prevent detection.

C. The JET is extremely immune to RFI and to air turbulence. However, to minimize false alarms, avoid aiming the detector at heaters, sources of light, or windows subjected to direct sunlight. Also avoid running wiring close to high power electrical cables.

D. Remove the front cover, as explained in Para. 3.1, Step A.

E. Mount the base (equipped with the printed circuit board) in the location and height selected for optimum coverage. For surface mounting, use the two knockouts at the back; for corner mounting, use the knockouts on the angled sides (see Figure 4).

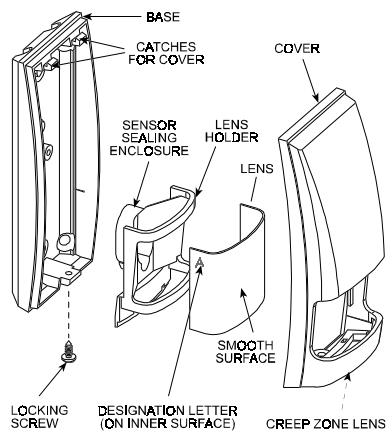


Figure 2. Cover and Lens Assembly

3.3 Wiring (see Figure 3)

Route the wires through the wiring knockouts at the top part of the base. Connect wires to the terminal block in the following order.

A. Connect the TAMP N.C. terminals to a normally closed 24-hour protection zone of the control panel. Tamper contacts will open when cover is removed.

B. Connect the N.C. (relay) terminals to a normally closed burglar zone of the control panel. The contacts open if motion is detected or during a power loss.

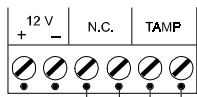


Figure 3. Terminal Block Wiring

For installations in Canada, the N.C. relay must be connected to an end-of-line resistor supervised zone.

C. Connect the 12V (+) and (-) terminals to a 9 to 16 Volt DC power source (observe polarity). The power supply must have at least 4 hours of battery back-up. Each JET unit requires about 17 mA.

3.4 Vertical Adjustment

The vertical adjustment scale (printed on the lower right side of the p.c. board - see Fig. 4) and the plastic pointer on the base indicate in degrees the approximate vertical angle between the horizontal line of the unit and the upper detection layer.

Table 1 - Vertical Adjusting Scale

Mounting Height	Coverage Range												
	7	10	13	17	20	23	26	30	40	50	60	90	
ft →	2	3	4	5	6	7	8	9	12	15	18	27	
↓ m	2.1	3.0	3.9	4.9	6.1	7.3	8.5	9.8	12.8	15.2	18.3	27.4	
4	1.2	-8°	-6°	-5°	-4°	-3°	-2°	-2°	-1°	-1°	-1°	0°	
5	1.5	-	-12°	-8°	-7°	-6°	-5°	-4°	-3°	-2°	-2°	-1°	
6	1.8	-	-	-	-11°	-8°	-8°	-7°	-6°	-5°	-4°	-3°	-2°
7	2	-	-	-	-	-12°	-10°	-9°	-8°	-6°	-5°	-4°	-3°
8	2.5	-	-	-	-	-	-11°	-10°	-7°	-6°	-5°	-3°	-
10	3	-	-	-	-	-	-	-	-10°	-9°	-7°	-4°	-
12	3.6	-	-	-	-	-	-	-	-	-12°	-10°	-8°	-6°

Example: If you require coverage range of 40 ft (12 m) and wish to install the sensor at a height of 6 ft (1.8 m) from the ground, set the Vertical Adjustment Scale to -3°.

Table 1 shows the recommended scale settings for various combinations of mounting height and coverage distance. The scale enables fast and easy pattern adjustment from +2° to -12° in accordance with the installation height and the desired detection range.



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JET sensors are factory preset to -4°. To change the vertical pattern adjustment, loosen the screw which fastens the printed circuit board to the base. Slide the p.c. board up or down to the desired angle and tighten the screw firmly. In pet alley installations (lens D), the scale must be set to +2°.

3.5 Pulse Counter

The JET is equipped with a programmable pulse counter (see Figure 4), which can be set to count 1 or 3 pulses before activating the alarm relay. Place the jumper at the desired setting (1 or 3).

Three Pulses: This setting provides improved protection against false alarms caused by all types of environmental disturbances. 3 pulses should be used with wide angle, multi-beam lenses only.

One Pulse: This setting actually disables the pulse counter. One pulse should be used when it is necessary to activate an alarm on the first detected pulse, or in high security installations, when fast "catch" performance is of greatest importance.

One pulse must be used with lens B - the long-range lens

3.6 Swivel Mounting Brackets (option)

The BR-1 is a swivel, surface-mounted bracket for greater flexibility when setting the desired detection range. It is adjustable 30° down and 45° left, 45° right (see Figure 5).

The BR-2 is a swivel bracket kit for installation in room corners (see Figure 6)

The BR-3 is a swivel bracket kit for installation on ceilings (see Figure 7).

ATTENTION: with swivel brackets in use, the effective detection range may differ from that indicated in Table 1.

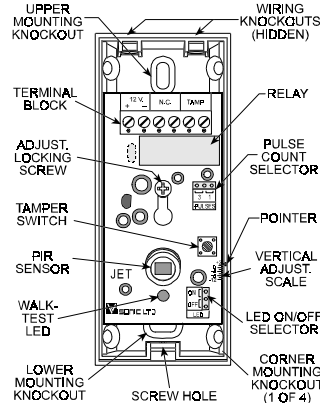


Figure 4. Inside View

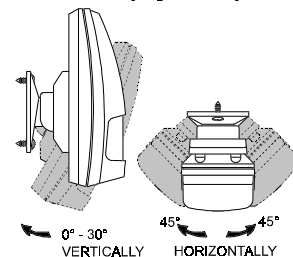


Figure 5. Swivel Bracket BR-1

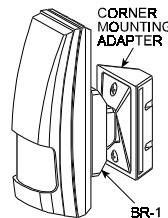


Figure 6. Swivel Bracket BR-2

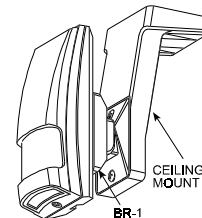


Figure 7. Swivel Bracket BR-3

3.7 Walk Testing

- Apply power and allow 5 minutes for warming up and stabilizing.
- Adjust the vertical pattern angle according to Table 1.
- Set the pulse counter per Para. 3.5.
- Walk-test the range and coverage area by walking slowly across the field of view (in opposite directions) and observe the LED. The LED lights whenever you enter or exit a sensitive beam. Allow 5 seconds between each test for the unit to stabilize.
- After testing, the LED can be disabled to prevent unauthorized persons from tracing the coverage pattern. To disable the LED, remove the "LED" jumper from the ON position and put it at OFF.

NOTE: The range and coverage area should be checked at least once a year by the installer. To assure proper continuous functioning, the user should be instructed to perform a walk test at the far end of the coverage pattern to assure an alarm signal prior to each time the alarm system is armed.



Refer to separate warranty statement