

# CLIP 1,2,3,4

## The Smallest Passive Infra Red Detector Series



**Visonic Ltd**

## Installation Instructions

### 1. INTRODUCTION

The new CLIP series features the smallest and most elegant passive infrared (PIR) detectors presently marketed. The series includes four models, CLIP-1 through CLIP-4, each with a different detection pattern.

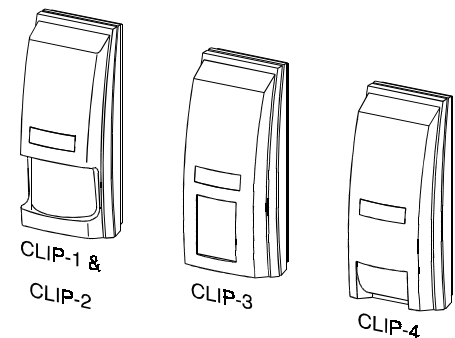
False alarms caused by environmental disturbances are virtually eliminated by a combination of a light rejection filter and a low-noise pyroelectric detector. All four CLIP models are equipped with a built-in two-step alternate polarity pulse counter for additional false-alarm protection. They have been designed to give reliable, long-life, trouble-free service.

Four models are available:

- CLIP-1: Wide Angle
- CLIP-2: Pet Alley
- CLIP-3: Long Range
- CLIP-4: Curtain

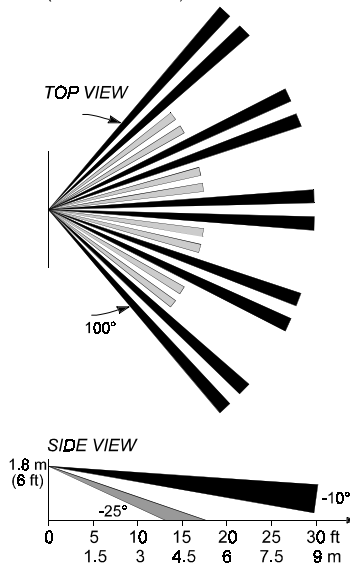
There is a difference in shape between the four models (Figure 1). Detailed specifications of the lenses employed in each model are given below. Detection patterns of the CLIP-1, 2 and 3 are given in Figures 2, 3, and 4, respectively

Mounting alternatives and coverage patterns for the CLIP-4 solid curtain model are shown in Figures 5 through 9.



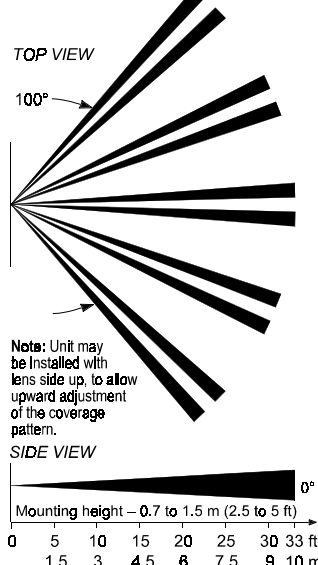
**Figure 1. The CLIP Models**

**CLIP-1 Wide Angle**  
Maximum coverage 9 x 13.5 m  
(30 x 45 ft / 100°)



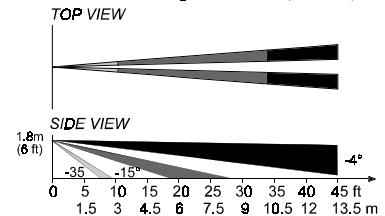
**Figure 2. The CLIP-1 Coverage Pattern**

**CLIP-2 Pet Alley**  
Maximum coverage 10 x 13.5 m  
(33 x 45 ft / 100°)

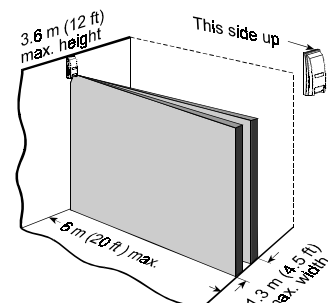


**Figure 3. The CLIP-2 Coverage Pattern**

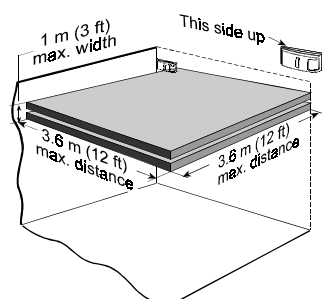
**CLIP-3 Long Range**  
Maximum coverage 2 x 13.5 m (6 x 45 ft)



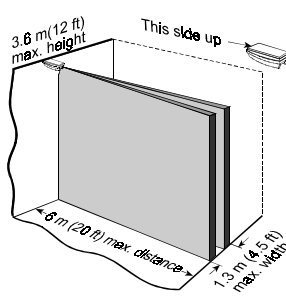
**Figure 4. The CLIP-3 Coverage Pattern**



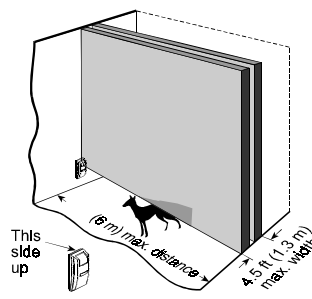
**Figure 5. CLIP-4: Wall-Mount Curtain**



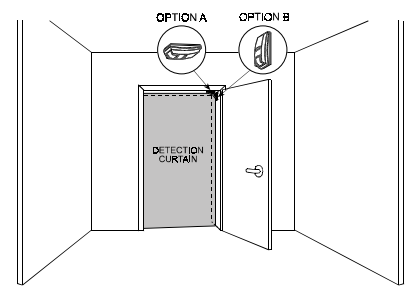
**Figure 6. CLIP-4: Ceiling-Mount Curtain**



**Figure 7. CLIP-4: Overhead Curtain**



**Figure 8. CLIP-4: Curtain with Pet Alley**



**Figure 9. CLIP-4: Mounting on Internal Doorframe for Passage Detection**

## 2. SPECIFICATIONS

### OPTICAL

**Detection Pattern:** 4 versions are available, each with a different detection pattern.

**CLIP-1:** 100° Wide Angle. Provides 9 dual beams in 2 detection layers, with maximum coverage area of 9 x 13.5 m (30 x 45 ft).

**CLIP-2:** 100° Pet Alley. Provides 5 dual beams in a single detection layer, with maximum coverage area of 10 x 13.5 m (33 x 45 ft).

**CLIP-3:** Long Range. Provides a long range corridor barrier with two fill-in beams below the long beam. The maximum coverage range is 13.5 m (45 ft).

**CLIP-4:** Curtain. Provides a solid curtain with maximum coverage area of 3.6 x 6 m (12 x 20 ft).

**Adjustment:** Vertical 0° to -12° calibrated scale.

### ELECTRICAL

**Voltage:** 10 to 16 VDC.

**Current:** 12.5 mA at 12 VDC.

**Alarm Output:** Normally closed (fail-safe) contacts. 18Ω resistor in series with contacts. Rating - 0.1A resistive /24 VDC.

**Tamper Output:** Normally closed. Rating 0.1A resistive /24 VDC.

**Alarm Period:** 2-5 seconds.

**Pulse Counter:** 2 position selector, 1 or 2 pulse operation (alternate polarity).

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

**Detector:** Dual-element low noise pyroelectric detector.

### MOUNTING

**CLIP-1, 2 and 3:** Wall mounting.

**CLIP-4:** Wall or ceiling mounting.

**Mounting Height:**

**CLIP-1 and 3:** Up to 2.4 m (8 ft).

**CLIP-2:** 0.7 to 1.5 m (2.5 to 5 ft).

**CLIP-4:** Up to 3.6 m (12 ft).

### 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:** > 20 V/m to 1000 MHz.

### PHYSICAL

**Dimensions (H x W x D):** 70 x 28 x 25 mm. (2-3/4 x 1-1/4 x 1 in).

**Weight:** 25 g. (0.9 oz).

**Color:** White.

## 3. INSTALLATION

### 3.1 CLIP Unit Disassembly

The screw which attaches the front cover to the base is hidden behind the miniature plastic nameplate at the front.

#### A. Removing the Front Cover

Remove the name-plate from its recess by inserting the blade of a small screwdriver into one of the narrow gaps at the sides, as shown in Figure 10. Lever carefully side-ways, until the name-plate arches slightly out and snaps free (do not let it fly free and get lost). Retain the nameplate and loosen the screw within the inner shaft (see Figure 11). Remove the cover carefully, to avoid dropping the screw.

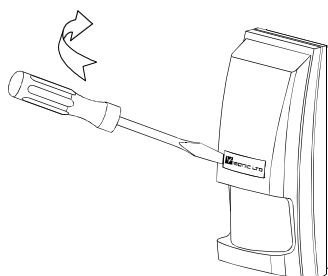


Figure 10. Disassembly of the CLIP PIR

#### B. Installing the Front Cover

Carefully fit the front cover onto the base, with the lens in front of the sensor, insert the screw into its shaft and tighten it well.

Place the nameplate correctly, and insert its left-side tab into the left-side groove. Press the free edge of the nameplate sideways with your finger against the already seated left edge, until the name plate arches slightly outward. Then press the right side tab into the right side groove, making sure it snaps shut.

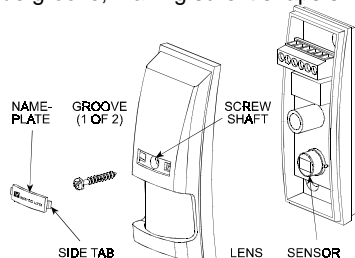


Figure 11. Disassembly of the CLIP PIR

### 3.2 Mounting

The CLIP-1 through CLIP-3 are designed for mounting directly on walls (surface mounting). The regular wall mounting position is with the lens down. The CLIP-4 solid curtain model may be mounted in various positions on walls, ceilings and door frames (Figures 5 through 9).

**A.** Select the mounting location so that the expected motion of an

intruder will cross the coverage pattern.

**B.** The maximum mounting height for CLIP -1 and CLIP-3 is 2.4 m (8 ft). An accurate adjustment table – Table 1 – serves as a guide which provides the recommended vertical adjustment with respect to detection range and mounting height.

**C.** When mounting the CLIP-4 on the ceiling (see Figure 6), the ceiling height must not exceed 3.6 m (12 ft). The maximum detection distance from the detector is 6 m (20 ft), and the curtain width at that distance is 1.3 m (4.5 ft).

**D.** Alternatively, the pet alley model CLIP-2 may be installed in a lens-up position. This will allow upward adjustment of the pet alley, so that the lower part of the detection pattern will be parallel to the floor.

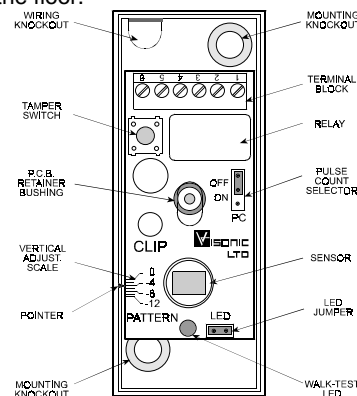


Figure 12. Inside the CLIP

**E.** CLIP is extremely immune to air turbulence and RFI. However, to minimize possible false alarms, it is highly recommended to 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.

**F.** Remove the front cover as instructed in Section 3, Para. A.

**G.** Mount the base with the PCB intact at the location and height selected for optimum coverage.

Use the two mounting knockouts at the back of the base (Figure 12). Carefully slide the PCB up to gain access to the bottom mounting knockout which is partly hidden.

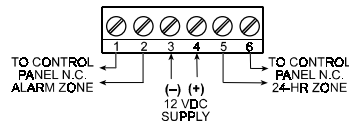
**Be sure to do so by grabbing the terminal block with two fingers. Do not exert force on any other component!**

**H.** Always install the unit on a firm and stable surface, and assure that there are no moving objects within its field of view.

### 3.3 Wiring

To route wires into the detector, use the wiring knockout located at the top left of the unit base (Figure 12).

Since the knockout is angular, the wiring may be inserted from behind the base or from the top, as required for the particular installation. Refer to Fig. 13



**Figure 13. Terminal Block Wiring**

and connect wires to the terminal block in the following order.

- Connect terminals 5 and 6 – the tamper N.C. terminals – to a normally closed 24-hour protective loop of the control panel. The tamper contacts will open when the cover is removed.
- Connect terminals 1,2 (the relay N.C. terminals) to a normally closed protective loop of the control panel. The relay contacts will open when motion is detected or during power loss.
- Connect terminals 3 (–) and 4 (+) to a 10 to 16 Volt DC power source, making sure that the polarity is correct. It is mandatory that the power supply have battery backup. Current drain of each CLIP PIR is approximately 12.5 mA.

### 3.4 Vertical Adjustment

The vertical adjustment scale (printed on the lower left corner of the PCB) 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 gives the recommended scale adjustment for various combinations of mounting height and coverage distance. The scale permits fast, easy pattern adjustment from 0° to -12° downward according to the installation height and the required coverage range.

The sensors are preset to -4°. To change the vertical pattern adjustment, remove the cover, hold the terminal block with two fingers and slide the PCB up or down to the desired angle.

**Caution! CLIP is a delicate device due to its small size. Do not exert force on any component other than the terminal block. Failure to observe this may damage the detector.**

The friction on the PCB should be enough to maintain the new position until you remount the front cover and tighten the screw. Tightening the screw exerts additional pressure on the plastic bushing which binds the p.c. board to the back cover.

**Note:** Since the beam width increases with distance from the detector, an inverted (lens up) installation of the CLIP-2 (Pet Alley model) is advisable in certain cases. Set the scale between -4° and -6°, to obtain the desired pet alley height.

**Table 1. Vertical Adjusting Scale**

Mounting Height	Coverage Range										
	ft	7	10	13	17	20	23	26	30	36	45
3	1	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°
4	1.2	-8°	-6°	-4°	-4°	-2°	-2°	-2°	-2°	0°	0°
5	1.5	-	-12°	-8°	-6°	-6°	-4°	-4°	-4°	-2°	-2°
6	1.8	-	-	-12°	-10°	-10°	-8°	-6°	-6°	-4°	-4°
7	2	-	-	-	-12°	-10°	-8°	-8°	-8°	-6°	-4°
8	2.5	-	-	-	-	-	-12°	-10°	-10°	-8°	-6°

**Example:** if you require coverage range of 9 m (30 ft) and wish to install the sensor at a height of 1.8 m (6 ft) from the ground, set the Vertical Adjustment Scale to -6°.

### 3.5 CLIP Pulse Counter

The CLIP PIRs are equipped with a programmable pulse counter which can be set to count 1 or 2 pulses with alternate polarity, before activating the alarm relay. To set the pulse counter, place the jumper at the desired setting (ON or OFF).

**ON (2 pulses).** This setting provides improved protection against false alarms caused by all types of environmental disturbances. It should only be used in temperature controlled locations (less than 30°C / 86°F).

**OFF (1 Pulse).** This setting actually disables the pulse counter. It 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.

### 3.6 Walk Testing

- Apply 12 VDC power and allow five minutes for the unit to warm up and stabilize.
- Adjust the vertical calibration angle according to Table 1.
- Set the pulse counter per Para. 3.5 above.
- 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 up 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 its position across the 2 pins and install it on one of the pins to prevent losing it.

**Note:** The range and coverage area should be checked at least once a year. 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.

### WARRANTY

Visonic Ltd. and/or its subsidiaries and its affiliates ("the Manufacturer") warrants its products hereinafter referred to as "the Product" or "Products" to be in conformance with its own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve months from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or replace the product or any part thereof. The Manufacturer shall not be responsible for dismantling and/or reinstallation charges. To exercise the warranty the product must be returned to the Manufacturer freight prepaid and insured.

**This warranty does not apply in the following cases:** improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than the Manufacturer.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express or implied, including any warranty of merchantability or fitness for a particular purpose, or otherwise. In no case shall the Manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties whatsoever, as aforesaid.

This warranty shall not be modified, varied or extended, and the Manufacturer does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the Product only. All products, accessories or attachments of others used in conjunction with the Product, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products.

The Manufacturer does not represent that its Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. User understands that a properly installed and maintained alarm may only reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no death, personal damage and/or damage to property as a result.

**The Manufacturer shall have no liability for any death, personal and/or bodily injury and/or damage to property or other loss whether direct, indirect, incidental, consequential or otherwise, based on a claim that the Product failed to function.** However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall not in any case exceed the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Manufacturer.

**Warning:** The user should follow the installation and operation instructions and among other things test the Product and the whole system at least once a week. For various reasons, including, but not limited to, changes in environmental conditions, electric or electronic disruptions and tampering, the Product may not perform as expected. The user is advised to take all necessary precautions for his/her safety and the protection of his/her property.

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