

# CLIP-4N

The Smallest Digital, Curtain-Type Infrared Detector



## Installation Instructions

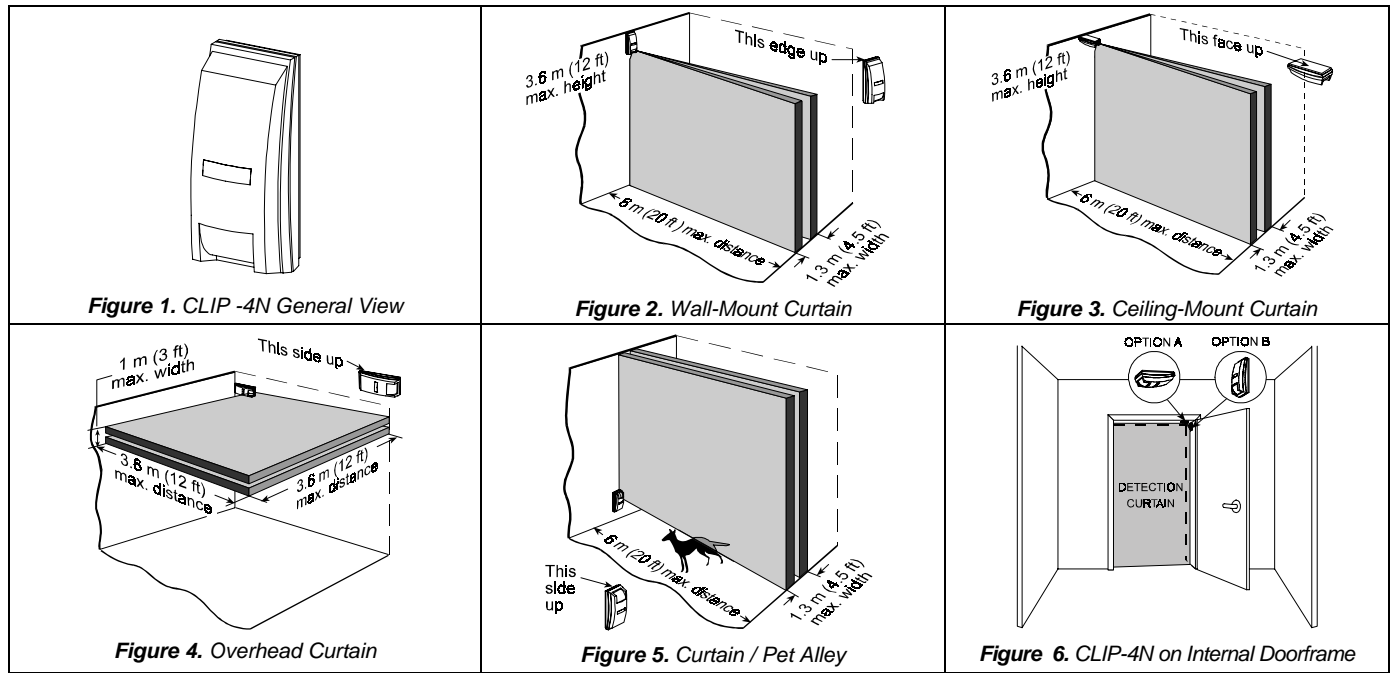
### 1. INTRODUCTION

The CLIP-4N is the smallest and most elegant curtain-pattern PIR detector, designed for adjustment-free easy installation. Its function is based on new, patented digital signal processing.

A new technology is used to include 3 different detectors in a single case, each programmable for optimized performance at the specific mounting location. This results in better catch performance and virtually no false alarms.

The superiority of this detector over similar products is achieved by applying an improved version of the patented **True Motion Recognition™** (TMR) algorithm. This advanced motion analysis method allows the CLIP-4N to distinguish between the true motion of the human body and any other disturbances that cause false alarms.

Detailed coverage patterns and mounting alternatives are given in Figures 2 through 6 below.



### 2. SPECIFICATIONS

#### OPTICAL

**Number of Curtain Beams:** 2

**Mounting Positions:** See Figures 2 through 6.

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

**Range:** Long, Medium and Short (jumper-selected)

#### ELECTRICAL

**Voltage:** 10 to 16 VDC.

**Current Drain:** About 8 mA at 12 VDC.

**Alarm Output:** Solid-state relay, N.C., up to 100 ma / 30 V, approx. 30 ohms internal resistance. Circuit opens upon alarm.

**Tamper Output:** N.C., rated at 50 mA resistive / 30 VDC.

**Alarm Duration:** 2-3 seconds.

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

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

**Microprocessor:** 8-bit, low power CMOS.

#### 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.

#### PATENTS

U.S. Patent 5,693,943 (other patents pending)

### 3. INSTALLATION

#### 3.1 Disassembly and Assembly

##### A. Removing the Front Cover

Insert a small screwdriver into one of the narrow gaps at the sides of the name plate (see Fig. 7). Lever carefully sideways, until the name plate arches slightly out and snaps free (do not let it fly off). Retain the name plate and loosen the screw within the inner shaft (see Fig. 8). Remove the cover carefully, to avoid dropping the screw.

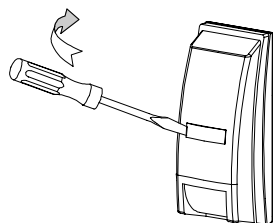


Figure 7. Name-Plate Removal

##### 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.

Position the name plate correctly, and insert one of the tabs into its groove. Press the free edge sideways against the already seated edge, until the name plate arches slightly outward. Then force the other tab into its groove, and let the name plate snap into place.

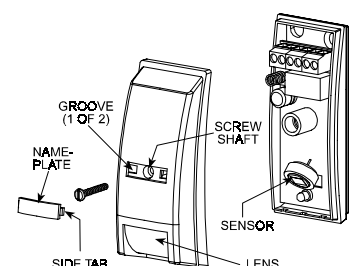


Figure 8. Disassembly

### 3.2 Mounting

The CLIP-4N may be mounted in various positions on walls, ceilings and door frames (see Figures 2 to 6).

**CAUTION!** To prevent false alarms caused by external temperature changes and sudden air gusts, detectors should not be mounted on or within window frames built into external walls. Moreover, it is mandatory to seal the wiring entry holes with sealing compound such as RTV, thus protecting the sensor from insects and air currents.

- A. Select the mounting location so that the expected motion of an intruder will cross the curtain beams.
- B. When mounting on the ceiling (Figure 3), the ceiling height must not exceed 3.6 m (12 ft). The maximum detection distance is 6 m (20 ft), and the curtain width at that distance is 1.3 m (4.5 ft).
- C. To minimize false alarms, it is advisable 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.
- D. Remove the front cover as instructed in Para. 3.1A.
- E. Mount the base with the PCB at the location and height that gives optimum coverage. Use the two mounting knock-outs (see Fig. 9).
- F. Always install the unit on a firm and stable surface.

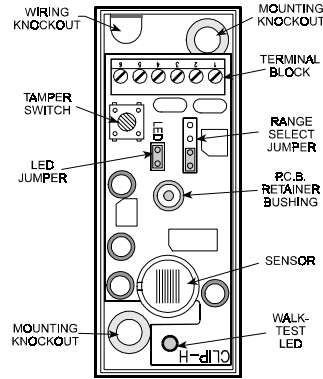


Figure 9. Inside the CLIP-4N

### 3.3 Wiring

To route wires into the detector, use the wiring knockout located at the top left of the unit base (Figure 9). 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. 10 and connect wires to the terminal block in the following order:

- A. 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.
- B. Connect terminals 1 & 2 (the relay N.C. terminals) to a normally closed protective loop of the control panel. The alarm output circuit will open when motion is detected or during power loss.
- C. Connect terminals 3 (-) and 4 (+) to a 10 to 16 Volt DC power source (observe polarity). The power supply must have battery backup. The current drain of each unit is approximately 12.5 mA.
- D. It is advisable to seal all openings properly after installation.

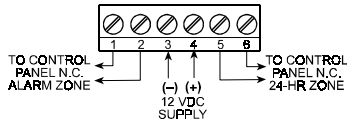


Figure 10. Terminal Block Wiring

### 3.4 Setting the Coverage Range

A 3-pin jumper is used to select 3 coverage ranges for the curtain beams (see Figure 11). The jumpers are shown as seen when the detector is positioned with its terminal block up (refer to Figure 9).

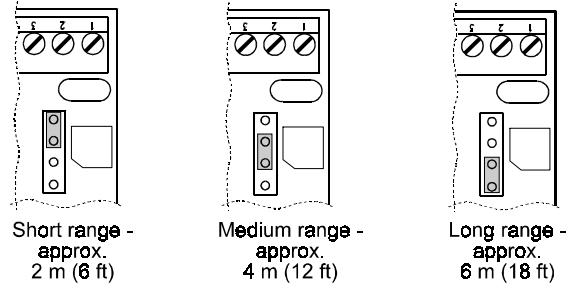


Figure 11. Coverage Range Jumper Settings

The purpose of the range setting is to ensure optimal signal processing and high immunity against false alarms.

Mount the range jumper in the desired position and make sure that the protected area is within the selected coverage range. Carry out a walk test (refer to Para. 3.5 below) to verify proper performance.

### 3.5 Walk Testing

- A. Apply 12 VDC and allow 1 minute for warming up and stabilizing.
- B. Walk slowly across the curtain pattern (in opposite directions). The LED lights whenever you enter or exit a curtain beam. Allow 5 seconds between each test for the unit to stabilize.
- C. After testing, you may disable the LED to prevent unauthorized tracing the coverage pattern. Remove the LED jumper from its position across the 2 pins and install it on one of the pins.

**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.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a circuit different from the one which supplies power to the receiver.
- Consult the dealer or an experienced radio/TV technician.

**WARNING!** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### 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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VISONIC LTD (ISRAEL): P.O.B 22020 TEL-AVIV 61220 ISRAEL. PHONE: (972-3) 645-6789, FAX: (972-3) 645-6788  
 VISONIC INC. (U.S.A.): 10 NORTHWOOD DRIVE, BLOOMFIELD CT. 06002-1911. PHONE: (860) 243-0833, (800) 223-0020 FAX: (860) 242-8094  
 VISONIC LTD. (UK): FRASER ROAD, PRIORY BUSINESS PARK, BEDFORD MK44 3WH. PHONE: (0870) 7300800 FAX: (0870) 7300801  
 INTERNET: www.visonic.com

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