

# CORAL PLUS

Temperature-Compensated PIR Detector



Installation Instructions

## 1. INTRODUCTION

The **CORAL PLUS** passive infrared detector is a new, advanced version of the popular CORAL detector featuring increased detection range, improved stability and enhanced RFI protection (greater than 30 V/m).

**CORAL PLUS'** special advantage is its high-temperature compensation for maximum "catch" performance, and its unique low-temperature compensation for optimum false-alarm rejection. The pyroelectric sensor of the **CORAL PLUS** is enclosed in a

sealed chamber, protected from insects and air drafts. The pulse counter may be switched between 1 and 3 pulses, as desired.

**CORAL PLUS** has a selection of four interchangeable lenses: wide angle, long range, ultra-wide angle and pet alley. The appropriate lens for each application can be selected to match the desired coverage.

*In addition to regular wall and corner mounting, 3 optional swivel brackets are available for increased versatility of installation.*

## 2. SPECIFICATIONS

### OPTICAL

#### Four Detection Patterns:

**LENS-A:** 90° Wide Angle. Provides 34 beams in 3 detection layers with maximum coverage area of 50 x 50 ft (15 x 15 m).

**Note:** This is the standard lens supplied with each **CORAL PLUS** unit.

**LENS-B:** Long Range. Provides narrow angle corridor pattern with maximum coverage area of 3 x 27 m (10 x 90 ft).

**LENS-C:** 145° Ultra-Wide Angle. Provides 34 beams in 3 detection layers with maximum coverage area of 13.5 x 18 m (45 x 60 ft).

**LENS-D:** 90° Pet Alley. Provides 14 beams in a single layer with maximum coverage area of 15 x 15 m (50 x 50 ft).

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

### 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 / 24 VDC.

**Tamper Output:** Normally closed, rated 0.5 A resistive / 24 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

Surface or corner (without brackets).

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

**Mounting Brackets** (See Figure 4)

**BR-1:** Swivel Bracket (optional), adjustable 30° downward and 45° left, 45° right.

**BR-2:** Same as BR-1, with corner adapter.

**BR-3:** Same as BR-1, with ceiling adapter.

### 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:** >30 V/m to 1000 MHz.

### PHYSICAL

**Size:** 60 x 104 x 32 mm (2.4 x 4.1 x 1.3 in.).

**Weight:** 77 g (2-3/4 oz).

**Color:** White.

### PATENTS

U.S. Patent No. Des. 346,567

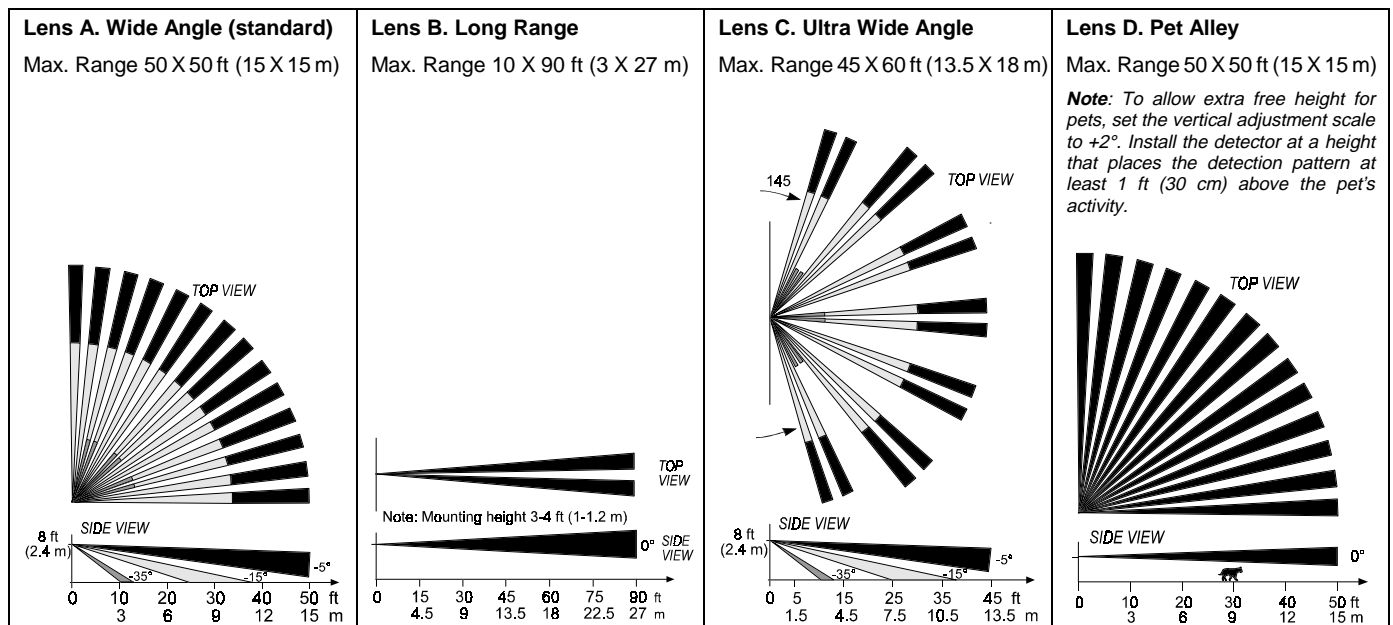


Figure 1. Coverage Patterns

# 3. INSTALLATION

## 3.1 Mounting

The **CORAL PLUS** can be installed directly on a wall (surface mounted) or in a corner. For optional swivel brackets, see Para. 3.3 and Figure 4. Always mount the unit on a firm and stable surface.

- A. Select the mounting location so that the expected motion of an intruder would cross the beams of the coverage pattern.
- B. Select the most convenient mounting height. Built-in installation aids enable you to mount the unit anywhere up to a 3.6 m (12') height. An accurate adjustment table (Table 1) determines the recommended angles for various combinations of range and mounting height.
- C. **CORAL PLUS** is extremely immune to air turbulence and RF interference (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.
- D. To open the front cover, remove the screw located on the bottom of the unit. Separate and remove the front cover from the base.
- 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 of the base; for corner mounting use the knockouts on the angled sides. The unit must be fastened firmly to the mounting surface, to avoid possible vibrations.

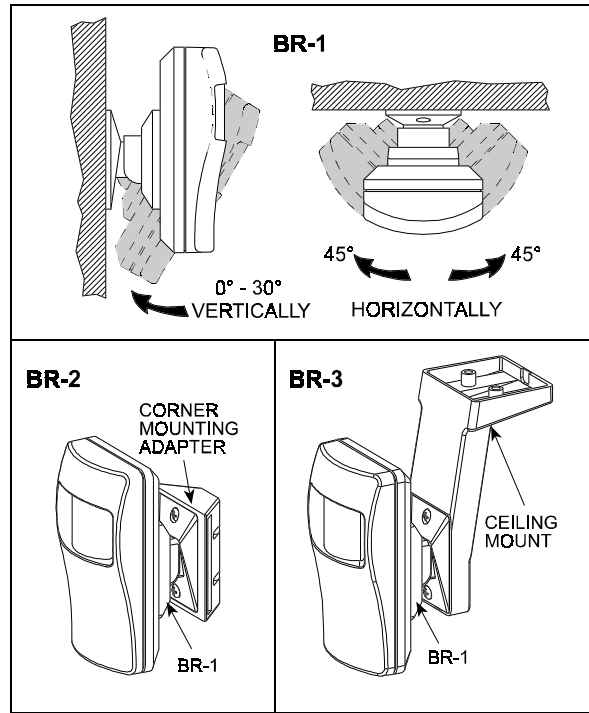


Figure 4. Optional Swivel Brackets

## 3.2 Changing Lenses

To change a lens, remove the screw at the bottom of the unit and open the front cover. Insert a small screwdriver blade into the slot between the lens holder and the cover. Lever the handle outward to release the lens holder (Fig. 2).

Insert the new lens with the smooth surface outside and the lens designation letter in the upper right corner (Fig. 3). Carefully center the lens so that the distance from its edges to the edge of the cover is the same on each side of the cover. Holding the lens firmly in place, align the lens holder as shown in Figure 3 and push it toward the cover until a click is heard.

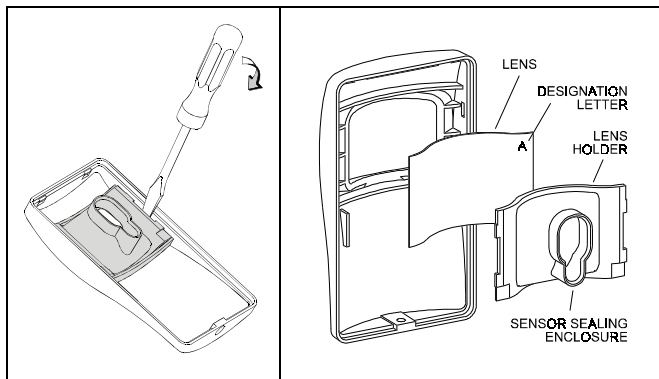


Figure 2. Removing the Lens Holder

Figure 3. Lens Assembly

## 3.3 Optional Swivel Brackets

The BR-1 is a swivel, surface-mounted bracket which accommodates the **CORAL PLUS** for greater flexibility when setting the desired detection range. The BR-1 is adjustable 30° downward and 45° left, 45° right (see Figure 4).

The BR-2 is a swivel bracket kit for installation in room corners. It consists of the BR-1 and a corner mounting adapter.

The BR-3 is a swivel bracket kit for installation on ceilings. It consists of the BR-1 and a ceiling mounting adapter.

**ATTENTION:** With swivel brackets in use, the effective detection range may differ from that indicated in Table 1 - the vertical adjusting scale.

## 3.4 Wiring

To route the wires into the detector, use either the wiring knockouts at the bottom of the base, or the channel and its associated knockout on the back of the base. The channel allows routing of wires from the ceiling under the detector and then inside. Refer to fig 5.

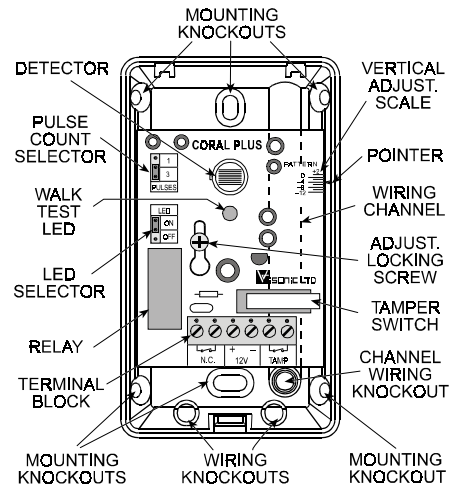


Figure 5. Printed Circuit Board

Connect wires to the terminal block in the following order. Refer to Figure 6.

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

B. Connect the **N.C.** relay terminals to a normally closed burglar protection zone of the control panel. Relay contacts will open when motion is detected or during power loss.

**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 and check for correct polarity. The power supply must have at least 4 hours of battery backup. The detector's current drain is approximately 17 mA.

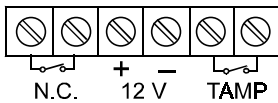


Figure 6 - Terminal Block Wiring

### 3.5 Vertical Adjustment

The vertical adjustment scale (printed on the upper right corner of the p.c. board) and the plastic pointer on the base indicate in degrees the 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 enables fast, easy pattern adjustment from +2° to -12° downward according to the installation height and the required coverage range.

Table 1 - Vertical Adjusting Scale

Mounting Height	Coverage Range											
	7	10	13	17	20	23	26	30	40	50	60	90
ft →	7	10	13	17	20	23	26	30	40	50	60	90
↓ m	2	3	4	5	6	7	8	9	12	15	18	27
3	1	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°
4	1.2	-8°	-6°	-5°	-4°	-3°	-2°	-2°	-1°	-1°	-1°	0°
5	1.5	-	-12°	-9°	-7°	-6°	-5°	-5°	-4°	-3°	-2°	-1°
6	1.8	-	-	-	-11°	-9°	-8°	-7°	-6°	-5°	-4°	-3°
7	2	-	-	-	-	-12°	-10°	-9°	-8°	-6°	-5°	-4°
8	2.5	-	-	-	-	-	-	-11°	-10°	-7°	-6°	-5°
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 -5°.

All CORAL PLUS 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. A keyhole shaped slot permits easy removal of the PCB for maintenance by just loosening its securing screw.

**Note:** In pet alley installations (lens D), set the scale to +2°, to allow extra height for pets. Install the unit at a height that enables directing the detection pattern about 30 cm (1 foot) above the pet's activity.

### 3.6 The Pulse Counter

The CORAL PLUS is equipped with a programmable pulse counter that can be set to count 1 or 3 pulses, before activating the alarm relay. To set the pulse counter, place the jumper at the desired setting (1 or 3).

**3 Pulses:** This setting provides improved protection against false alarms caused by all types of environmental disturbances. Three pulses may be selected for wide angle multi-beam lenses, but **do not use it with the long-range lens (Lens B).**

**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, such as when the long range lens is used, or in high security installations - where fast "catch" performance is of the greatest importance.

### 3.7 Walk Testing

- Apply power and allow five minutes for the unit to warm up and stabilize.
- Adjust the vertical pattern angle per Table 1.
- Set the pulse counter per Para. 3.6.
- Walk-test the range and coverage area by walking slowly across the field of view (in opposite directions) and observing 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 jumper from the upper and middle pins of the LED selector (ON) and place it across the middle and lower pins (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.

### 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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