1. INTRODUCTION

The CORAL PLUS passive infrared detector is a new, advanced version of the popular CORAL featuring an increased detection range, improved stability and enhanced RFI protection (greater than 30 V/m). The special advantage of the CORAL PLUS 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 - the appropriate lens for each application can be selected to match the desired coverage.

2. SPECIFICATIONS

OPTICAL
Detection Patterns: 5 interchangeable lenses - see Figure 1.
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 / 30 VDC.
Tamper Output: Normally closed, rated 0.5 A 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
Surface or corner (without brackets).

Mounting Height: Up to 3.6 m (12 ft).
Mounting Brackets: See Para. 3.3.

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.

MODELS AVAILABLE
CORAL PLUS: Regular model
CORAL PLUS X: Model without tamper switch

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

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 ft) 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 at 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.

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.

3.3 Optional Swivel Brackets
The BR-1 is a swivel, surface-mounted bracket for greater flexibility when setting the detection range. It is adjustable 30° downward and 45° left, 45° right (Figure 4). The BR-2 is a swivel bracket kit for room corners. It consists of the BR-1 and a corner adapter. The BR-3 is a swivel bracket kit for ceilings. It consists of the BR-1 and a ceiling 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 (see Figure 5) or the wiring channel and its knockout on the back. The channel allows routing wires from the ceiling under the base and then inside. 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.

C. Connect the 12V (+) and (–) terminals to a 9 - 16 Volt DC power source (observe polarity). The power supply must have at least 4 hours of battery backup. The unit’s current drain is approximately 17 mA.

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 setting for various combinations of mounting height and coverage distance. This allows fast, easy pattern adjustment from +2° to -12° downward according to the installation height and the required coverage range.

3.6 The Pulse Counter
A programmable pulse counter can be set to count 1 or 3 pulses, before activating the alarm relay. To set the pulse counter, place the programmable pulse counter on the control panel. The tamper function will be disabled to prevent unauthorized use.

3.7 Walk Testing
Apply power and allow 5 minutes for warming up and stabilizing.
A. Place the unit into the walk test mode.
B. Adjust the vertical pattern angle per Table 1.
C. Set the pulse counter per Para. 3.6.
D. Walk slowly across the field of view (in opposite directions) and observe the LED - it lights whenever you enter or exit a sensitivity zone. Allow 5 seconds between each test for the unit to stabilize.
E. After testing, the LED can be disabled to prevent unauthorized 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.

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