

## **Optex Incorporated**



1845 W. 205<sup>th</sup> St.  
Torrance, CA 90501-1510 USA  
TEL (310) 533-1500 and (800) 966-7839  
FAX (310) 533-5910

## **Description**

Doc: Architect/ Engineer Specifications  
Model: RX-40PI  
Desc: PIR Intrusion Detector with Small Pet Immunity

*NOTE: Words/statements within square brackets [ ] may be included when appropriate, or when selection is required.*

The Intrusion Detector[s] shall operate on the Verified Intrusion principle using Passive Infrared (PIR), and shall be Listed by Underwriter's Laboratories, Inc..

### **OUTPUT AND ENCLOSURE**

[Each] [The] detector shall provide the detection, signal processing, alarm relay, and operating power circuitry in the same enclosure; and shall provide an alarm relay actuation upon the detection of an intruder moving into or through its protection pattern. The enclosure shall be ready for surface and/or corner mounting, and shall be capable of mounting to a compatible Wall or Ceiling Mounting Bracket without modification.

The total weight shall be 2.5 oz. (70g).

[Each] [The] detector shall feature a single piece electronics board whose circuitry is specifically designed for this detector alone. The board shall be mounted to a housing with the cover being secured with a screw. The case shall include easy wiring knockouts, and a wiring guide with wide wiring space.

### **LED OPERATION**

The detector[s] shall incorporate a single, Red LED to indicate the operating conditions. Red LED illuminated shall indicate an alarm condition. Red LED not illuminated shall indicate a non-alarm condition. LED shall be able to be field disabled using an On/Off pin switch.

### **POWER REQUIREMENT**

The detector[s] shall be capable of operating from a DC power source rated within the range of 9.5 to 16 volts DC, and shall draw a nominal 17 milli-amps (mA) at 12 VDC.

### **ALARM OPERATION**

A condition of alarm shall occur when the PIR alarm conditions are met. The Sensitivity shall be 3.6°F (2°C) at 2ft/sec. (0.6m/sec.). The Detection Speed shall be 1 ~ 5 ft/sec. (0.3 ~ 1.5m/sec.). The Alarm Period shall be approx. 2.5 seconds. The Alarm Output shall be capable of handling 28VDC, 0.2A max, N.C.. The pulse count shall be approximately 20 sec., and shall allow for a selection mode of 2 or 4 triggers to initiate an alarm output. [Each] [The] detector shall signal the condition of alarm using a Normally Closed Reed Relay with terminal strip connections.

To accomplish PIR detection, [each] [the] detector shall contain a sealed Pyro-Electric sensor peaked for the detection of near-infrared energy in the 10 micron region.

### **SENSOR STABILITY**

The PIR detection shall use Quad Zone Logic Signal Processing. Quad Zone Logic provides multi segmented detection zones over the detection area. An alarm signal shall be created by the cumulated total IR energy of each zone. It is designed so that a human size target will normally fill 4 to 8 zones, and this shall cause an alarm to be

generated. Any smaller temperature change (i.e. small to medium size pets, rodents or moving curtains) shall only activate one or two zones at the same time, creating a much weaker detection signal. Pet immunity shall apply to animals and/or rodents 0 to 16 inches in height.

These signals shall be further analyzed by the "ECO" chip and signal processing circuit for accurate detection of humans and avoidance of most small animals. Temperature Compensation Logic shall be the primary functionality of the "ECO" chip. This temperature compensation circuit shall control sensitivity to improve stability against changes in environmental conditions.

To guard against false activations caused by RF interference, the detector shall incorporate RFI Protection capability. This circuitry shall adjust to background disturbances, in order to help reduce false activations while maintaining catch performance. No alarm shall occur at 20V/m from 100MHz to 1GHz.

To ensure proper circuit operation, the detector[s] shall incorporate a PIR self-test with defaults. When the device is turned on, the warm-up period shall be approx. 30 seconds.

[Each] [The] detector shall be rated to operate within the temperature range of [minus 4° Fahrenheit to plus 122° Fahrenheit] [minus 20° Celsius to plus 50° Celsius].

#### **LENS AND DETECTION PATTERN**

[Each] [The] detector shall be mounted between 5 ~ 8ft (1.5 ~ 2.4m) High.

[Each] [The] detector shall contain a front mounted spherical Fresnel lens that shall focus received infrared energy onto the sensor. The sensor shall construct a Wide Angle protection coverage field of 40ft x 40ft (12m x 12m), at 85° wide, with 78 detection zones. With the optional FL-60N (Optional Lens for Long Range Curtain Pattern), a 60ft x 6ft (18m x 1.8m) Long Range Coverage pattern shall also be available, with 20 detection zones. When selecting the Long Range detection pattern, the pulse count selector shall be set to "2". (Note: In the long range pattern there is no pet immunity).

#### **MODEL**

The Intrusion Detector shall be model RX-40PI [with optional Wall and Ceiling Mounting Bracket FA-3] [or] [with optional Long Range (Extremely Dense Multi Layer Curtain Lens) FL-60N].