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Description

Doc: Architect/ Engineer Specifications
Model: CX-502AM
Desc: PIR Intrusion Detector

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 4.8 oz. (135g).

[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.

LED OPERATION

[Each] [The] detector shall incorporate dual, Red and Yellow LED to indicate the operating conditions. Red LED illuminated shall indicate an Alarm, Alarm Memory, or initial Alarm Memory condition. Red LED not illuminated shall indicate a non-alarm condition. Yellow LED shall indicate Anti-Masking and Self-Checking. During the warm-up period, both Red and Yellow LED shall blink. The LED Alarm Indicator shall

be optional; it shall be capable of being field disabled using an On/Off DIP switch, or remotely from the control panel.

POWER REQUIREMENT

The detector[s] shall be capable of operating from a DC power source rated within the range of 9 to 18 volts DC, and draw a nominal 7mA (normal) and 19mA (maximum) within this voltage range.

ALARM OPERATION

A condition of alarm shall occur when the PIR alarm conditions are met. The Detectable Speed shall be 1 ~ 5 ft/sec. (0.3 ~ 1.5m/sec.). The Alarm Period shall be approx. $2.0 \pm .5$ seconds. The Alarm Output shall be capable of handling 28VDC, 0.2A max, N.C.. [Each] [The] detector shall signal the condition of alarm using a Normally Closed Reed Relay with terminal strip connections. The Alarm Sensitivity shall be 3°F (1.6°C) at 2ft/sec. (0.6m/sec.). A sensitivity adjustment switch shall include settings of L(Low) or H(High) for times when the detector is installed in a hostile area, and times when greater sensitivity is required. The detector[s] shall also contain a tamper switch that shall open when the cover is removed.

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.

[Each] [The] detector shall contain an alarm memory with a selectable polarity. When the system is armed and the polarity is positive, the detector[s] shall include a memory of an OPEN current or +5 ~ 18V DC. When the system is armed and the polarity is negative (DIP switch selectable), the detector[s] shall include a memory of 0 ~ 1V DC (grounded). When the system is disarmed, these values for positive and negative shall be reversed.

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.

To guard against false activations caused by RF interference, the detector shall incorporate RFI Protection capability that cancels over 50% of popcorn noise. This noise reduction circuitry shall adjust to background disturbances, in order to help reduce false activations while maintaining catch performance. No alarm shall occur at 30V/m within the range of 144 to 1,200MHz.

A Temperature Compensation Circuit shall also increase detection capability under high temperature conditions where the background temperature is similar to that of the human body. The patented multi-focus lens creates zones with high vertical density, providing maximum detection sensibility that shall remain stable even in high, low, or changing temperature conditions. [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]. [Each] [The] detector shall also tolerate an environmental humidity rate of

95% max. No false alarm shall occur within these operating conditions.

[Each] [The] detector shall also incorporate Multi Anti-Masking optical technology to further prevent disturbances with detection. The twin-window shall detect with high sensitivity the variations of optical signals as well as the optical direction differences caused by two photoelectric beams.

[Each] [The] detector shall also feature Visible Light Protection capability. The patented Double Conductive Shielding of the Pyro Electric Element shall provide a high protection level that exceeds H4 halogen (car headlight) within 8ft (2.4m) or 50,000lx of reflected sunlight within the detection area.

Sealed optics shall also eliminate the chance of false alarm due to drafts or small insects. The Pyro shall be sealed with the inside of the molding of the housing cover, to prevent these elements from affecting the pyroelectric sensor.

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. 1 minute, during which time the LED shall blink. A self-checking circuit shall also check the operation of the detector[s] at regular 5-hour intervals to ensure that the unit is always working correctly.

LENS AND DETECTION PATTERN

[Each] [The] detector shall contain a front mounted hard and durable spherical Fresnel lens that shall focus received infrared energy onto the sensor. The spherical design of this lens shall obtain sharp detection, because no bending is required to fit the lens into the curved housing.

The sensor and module combined shall construct a Wide Angle detection field 50ft x 50ft (15m x 15m), or 85° wide, with 82 zones of detection. A Long Range detection pattern shall also be available through the CL-80N (Optional Lens for Long Range

Curtain Pattern). In long mode, the coverage pattern shall be 80ft x 8ft (24m x 2.4m) long, with 22 zones of coverage. When selecting the Long Range detection pattern, the pulse count selector shall be set to "STD".

The mounting height of the detector[s] shall be between 6 ~ 10ft (1.8 ~ 3.0m) High.

MODEL

The Intrusion Detector shall be model CX-502AM (Anti-Masking), [with] [optional Wall Mount Bracket EA-1], [or] [with optional Multi Angle Wall Bracket FA-1W], [or] [with optional Multi Angle Ceiling Bracket FA-2C], [or] [with optional Long Range Lens [CL-80N]].