PASSIVE INFRARED DETECTOR

CX-702, CX-702V

FEATURES

CX-702 / CX-702V
- Dual Purpose Lens: Selectable "WIDE ANGLE" and "LONG RANGE" detection patterns
- Double Conductive Shielding of the pyroelectric element
  - Extremely High Light and RFI Immunity (Patent listed)
- Multifocus Optics Design (Patent listed)
- LED On/Off Switch
- Sealed Optics
- Easy Installation

CX-702V Only
- Alarm Memory
- LED Remote Control Terminal

OPTION

CA-1W: Wall Mount Bracket: adjustable ±45° (Horizontally), 0-20° (Vertically downwards)
CA-2C: Ceiling Bracket: adjustable ±45° (Horizontally), 0-20° (Vertically downwards)

1. INSTALLATION HINTS

Avoid direct sunlight.
Avoid mounting detector where movement of Fans or Air Conditioning Fans can be detected.
Avoid vapor or high humidity that can cause condensation.
Avoid Curtain, Screen, etc. blocking detection area.
Do not install outdoors.

6. WARNING
Never repair or modify product. It may cause accident, fire hazard or electric shock.

7. WARNING
When damage has occurred to the product, i.e., water logged, abnormal things inside product, overheating or smoking, strange smells etc., immediately stop using product and contact your supplier. Otherwise, continued use in such condition may cause electric shock or fire hazard.

8. CAUTION
Mount securely. A falling product may cause injury.

2. DETECTION AREA

WIDE ANGLE

TOP VIEW

SIDE VIEW

LONG RANGE

TOP VIEW

SIDE VIEW

**ATTENTION**

The specified detection area can be achieved by mounting the unit at a height of 8 ft (2.4 m). Mounting at a lower or higher height may reduce the area of coverage.
3. DESCRIPTION AND OPERATION

4. INSTALLATION

1. Loosen fastening screw and remove cover.

2. Lead in wires through knockouts along the wiring guide on the rear side of base. Mount base with supplied screws. When using a bracket, check matching knockout position before opening mounting holes. Wire according to Section 5.

3. When you remove the PCB, push down on the hook under PCB and remove it from its base. Attachment of PCB is the reverse of removal.

4. Remove lens holder carefully. Select wide angle or long range according to Section 6-2. (Note: Factory default is WIDE ANGLE.)

5. Check to confirm that the lens is in the desired position. Press down the lens holder until it clicks into place along the guide of cover. Fix the screw at the end.

6. Conduct a walktest and make adjustments (Section 7). Fit cover using fastening screw.

5. WIRING

CX702

CX-702V

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>CX-702</th>
<th>CX-702V</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG 22(0.33mm²)</td>
<td>1700ft (520m)</td>
<td>1180ft (360m)</td>
</tr>
<tr>
<td>AWG 20(0.50mm²)</td>
<td>2800ft (880m)</td>
<td>1830ft (560m)</td>
</tr>
<tr>
<td>AWG 18(0.8mm²)</td>
<td>4290ft (1310m)</td>
<td>2250ft (685m)</td>
</tr>
</tbody>
</table>

Power wires should not exceed the following lengths.

When using two or more units on one wire, the maximum length is obtained by dividing the maximum wire length listed above by the number of units used.

※ UL requires CX-702 to be connected to a UL listed power supply capable of providing a nominal input of 12VDC 11mA (max.) and battery standby time of 4 hours.
※ For UL Listed systems, do not connect field wiring more than 25ft. to Alarm Memory, and DL terminals.
※ The equipment shall be installed in accordance with the National Electrical Code, NFPA 70.
6. ADJUSTMENTS FOR REQUIRED AREA PATTERN

The CX-702 is designed to provide ideal detection areas for different patterns ranging from 40ft.(12m) to 70ft.(21m) Wide Angle, and 80ft.(24m) to 150ft.(45m) Long Range.

The following adjustments will provide ideal detection areas for each of these requirements.

1. DETERMINE THE AREA PATTERN

Before making adjustments, determine the pattern area, detection range mounting height.

2. SELECTING WIDE ANGLE OR LONG RANGE DETECTION

1. Inverting the lens will select either the Wide Angle or Long Range detection patterns.
2. Please note markings "W(Wide Angle)" and "L(Long Range)", on each side of lens.
3. For Wide Angle, "W" will be on top of lens.
4. For Long Range, "L" will be on top of lens.

3. VERTICAL ADJUSTMENT OF DETECTION AREA

Adjust the vertical angle according to the desired detection range and mounting height.

1. Set the upper edge of the lens at either the "A", "B" or "C" position.
2. The following chart illustrates the different position setting.
3. Confirm the detection area by conducting a walktest.

7. FUNCTIONS

1. LED ON/OFF

Jumper Pin Switch
The Alarm LED indicator can be switched either "ON" or "OFF".

D.L. terminal (CX-702V Only)
LED can be enabled or disabled remotely from control panel by D.L. terminal.
1) Place Jumper Pin Switch in OFF position.
2) LED:"ON" : Connect DL terminal to common ground with detector.(0~1VDC, grounded)
LED:"OFF": No Connection to the DL terminal.(OPEN or +5~16VDC)

2. PULSE COUNT

The Detection Mode can be switched to either "2" or "4" mode depending on the environmental conditions of the installation.

2 : For normal applications.
4 : For use in hostile areas where there may be movement of small animals or other objects such as fax machines or curtains.

When the "4" is selected, the detector's sensitivity may seem sluggish. It is therefore important to always conduct a walktest to ensure that the desired coverage is given.

3. ALARM MEMORY (CX-702V Only)

Alarm Memory
This function is used to indicate if the detector was activated while the panel was armed. It will cause the red LED on the Detector to illuminate once the panel has been disarmed.
Compatible Control Panel is required for Alarm memory.
Connect A.M. terminal to Control Panel's Control Voltage Signal terminal (System Arming Status Voltage Output).

<table>
<thead>
<tr>
<th>CONTROL VOLTAGE SIGNAL</th>
<th>POSITIVE</th>
<th>NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Armed</td>
<td>OPEN or +5-16VDC</td>
<td>0~1VDC(grounded)</td>
</tr>
<tr>
<td>System Disarmed</td>
<td>0~1VDC(grounded)</td>
<td>OPEN or +5-16VDC</td>
</tr>
</tbody>
</table>

Operation
If the unit triggered during armed period, when the system is disarmed, LED will remain lit to confirm that it reported an alarm.
- Alarm Memory will operate even when LED is switched OFF.
- Alarm Memory will not operate while system is disarmed.
- After Alarm Memory latches, Alarm Output and LED operate normally during armed period.

Reset
Alarm Memory resets automatically when system is re-armed.

AM Jumper

POSITIVE : Leave AM Jumper as it is.
NEGATIVE : Cut AM Jumper as shown.

CAUTION!
Always conduct a walktest after changing the position of this switch to ensure the detector is still providing optimum coverage.

CAUTION!
Do not use pulse count 4 for Long Range detection.
8.TROUBLE SHOOTING

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>PROBABLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED does not light.</td>
<td>Improper power supply voltage (disconnection, low voltage).</td>
<td>Correct supply voltage to 9.5 - 16V DC. See Section 5.</td>
</tr>
<tr>
<td></td>
<td>Improper detection area.</td>
<td>See Section 2.</td>
</tr>
<tr>
<td></td>
<td>LED switch is OFF.</td>
<td>Turn on the switch.</td>
</tr>
<tr>
<td></td>
<td>Improper polarity to detector.</td>
<td>Switch positive and negative at terminal.</td>
</tr>
<tr>
<td>LED lights even though no person is within area.</td>
<td>Moving object within area (curtain, wall hanging, etc.).</td>
<td>Remove the sources from the detection area.</td>
</tr>
<tr>
<td></td>
<td>Temperature of object within area changing rapidly (heater, air conditioning, etc.).</td>
<td>Remove object from the detection area.</td>
</tr>
<tr>
<td>LED lights but signal is not sent.</td>
<td>Relay contact is stuck or damaged due to overloading.</td>
<td>Check load of output. The unit needs repair or replacement.</td>
</tr>
<tr>
<td>LED continues to light</td>
<td>Faulty wiring.</td>
<td>Wire correctly.</td>
</tr>
<tr>
<td></td>
<td>Poor connection of alarm memory.</td>
<td>Reconnect wire.</td>
</tr>
<tr>
<td></td>
<td>Wrong control voltage from panel.</td>
<td>Must be 0-1V DC (grounded) See Section 7.3.</td>
</tr>
</tbody>
</table>

9.SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>CX-702 / CX-702V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection method</td>
<td>Passive infrared</td>
</tr>
<tr>
<td>Coverage</td>
<td>Wide Angle 85°wide</td>
</tr>
<tr>
<td>(70ft. x 70ft, (21m x 21m)</td>
<td>Long Range</td>
</tr>
<tr>
<td>Detection zones</td>
<td>68 zones</td>
</tr>
<tr>
<td>Mounting height</td>
<td>5 - 12ft. (1.5 - 3.6m)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>3°F at 2ft./sec., 8ft. mounting height</td>
</tr>
<tr>
<td>(1.6°C at 0.6m/sec., 2.4m mounting height)</td>
<td></td>
</tr>
<tr>
<td>Detectable speed</td>
<td>1-5ft./sec. (0.3 - 1.5m/sec.)</td>
</tr>
<tr>
<td>Power input</td>
<td>9.5 - 16VDC</td>
</tr>
<tr>
<td>Alarm period</td>
<td>Approx. 2.5 sec.</td>
</tr>
<tr>
<td>Alarm output</td>
<td>N.C. 28VDC 0.2A max.</td>
</tr>
<tr>
<td>Tamper switch</td>
<td>N.C. Opens when cover is removed. 28VDC 0.1A max.</td>
</tr>
<tr>
<td>Pulse count</td>
<td>Approx. 20 sec. 2 or 4</td>
</tr>
<tr>
<td>Warm-up period</td>
<td>Approx. 1 min.</td>
</tr>
<tr>
<td>LED indicator</td>
<td>Alarm condition</td>
</tr>
<tr>
<td>RF interference</td>
<td>No alarm 30V/m</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-4°F - +122°F (-20°C - +50°C)</td>
</tr>
<tr>
<td>Environment humidity</td>
<td>95% max.</td>
</tr>
<tr>
<td>Weight</td>
<td>7.0oz (200g)</td>
</tr>
</tbody>
</table>

*Specifications and design are subject to change without prior notice.*