



## INSTALLATION INSTRUCTIONS

Models **MC-550**  
**MC-550T**

**Microcontroller Based**  
**Passive Infrared**  
**Motion Sensor**

Range: 50' x 40'  
15 m x 12 m

### FEATURES

- 50' x 40' / 15 m x 12 m range
- Dual element PIR
- Dense detection pattern
- Wide angle optics
- Low 20 mA current draw at 12 VDC
- 10-14 VDC operation
- Zone finder
- Energized form A alarm relay
- Microcontroller signal processing
- Temperature compensation
- Diagnostics
- RF and white light immunity
- Selectable PIR sensitivity
- Mounting flexibility: on walls or in corners
- Bug proof

### MOUNTING LOCATION

The MC-550 / MC-550T is designed for use **indoors**. Make sure the sensor has a clear line-of-sight to the protected area. Infrared energy cannot penetrate solid objects. If the sensor is blocked, it will not alarm.

Aim the sensor toward the interior of the room, away from windows and heating/cooling sources. The unit can be corner or wall mounted at either 4' / 1.2 m, 7'6" / 2.3 m, or 10' / 3 m (see Range Chart on the next page).

#### False alarm immunity from small animals with the MC-550/550T can be expected in installations with:

- Any number of cats (or similar sized animals)\*
- Any number of birds, confined to a cage
- Birds flying randomly though a warehouse setting
- Any number of rats\*

\*The total weight of animals cannot exceed 15 pounds / 7 Kg.

#### For false alarm immunity with the above mentioned animals the following installation procedures must be observed:

- Use the standard wide angle lens optics
- Mount the sensor at 7'6" or 10' / 2.3 or 3 m
- Set the PIR pulse count at normal (PC3) or low (PC4)
- Make sure no animal(s) can get within 6' / 1.9 m in the sensor's direct line-of-sight.

### MOUNTING PROCEDURE

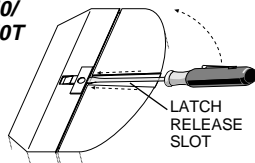
Prepare the sensor for mounting by removing the front cover and printed circuit board (PCB).

To remove the front cover of the sensor, use a screwdriver to slide into the latch release slot located at the top of the unit and then gently push up. (See Figure 1.)

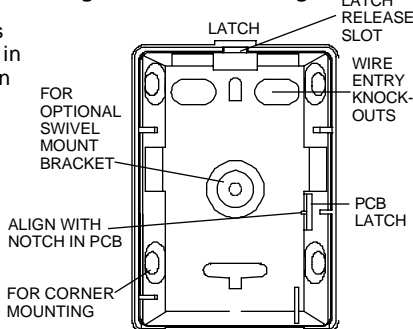
To remove the PCB, press the latch holding the PCB in place and gently pull up on the PCB until it releases. (See Figure 2.)

Using the rear housing as a template, mark mounting and wire access locations. Pull several inches of wire into the housing and fasten the rear housing to the wall.

**Figure 1** Opening the MC-550/ MC-550T



**Figure 2** Rear Housing

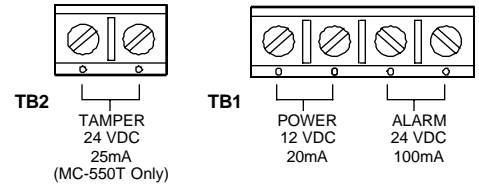


### WIRING

Terminals TB1 and TB2 (MC-550T only) are located at the top edge of the PCB. Wire the MC-550 / MC-550T as shown in Figure 3 using 14-22 AWG wire. After the wiring is complete, push as much of the wire as possible back into the wall.

For proper wiring methods, refer to the National Electrical Code, NFPA 70.

**Figure 3** Wiring

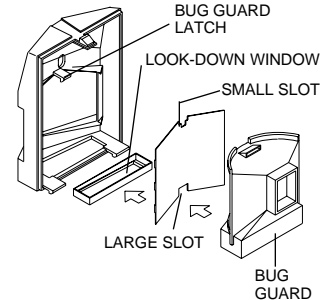


### CHANGING THE FRESNEL LENS

To install the optional pet-alley lens\*:

**Figure 4** Changing the Lens

- Remove the front cover of the MC-550 / MC-550T. (See Figure 1.)
- Press up on the Bug Guard latch and then pull the Bug Guard out of the front cover.
- Remove the existing lens, and place the new lens in with the SMOOTH side facing outward.
- Install the lens with the **small** slot at the **top** and the **large** slot at the **bottom**.
- Install the look-down mask (optional) over the inside of the look-down window.
- Place the Bug Guard into the look-down window then snap the Bug Guard back into place.
- Reassemble the housing.



\*Lens Option Kit Part Number 0-000-012-01

**Important:** When using pet-alley lens, optimum mounting height is 4 feet / 1.2 m and adjust PCB to +1 position.

### PIR SENSITIVITY

DS1 (Alarm LED) illuminates when an alarm condition is triggered.

ALIGNMENT NOTCH

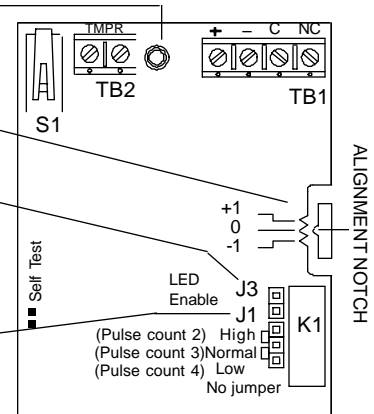
**Important:** Align with appropriate notch on the PCB (refer to Range Chart on the next page).

Install jumper at J3 to enable Alarm LED (DS1). *Jumper is factory installed.* (MC-550T Only)

Jumper position J1 on the PCB is used to set the sensitivity of the PIR detector.

Using the chart below, configure the MC-550 / MC-550T for the sensitivity best suited to your application.

**Figure 5** Printed Circuit Board



#### SENSITIVITY

#### JUMPER J1

High (PC2)	Jumper top & center pins
Normal (PC3)	Jumper center & bottom pins
Low (PC4)	Parked on one pin or off

A sensitivity setting of low is not recommended when run-through performance is required.

**Note:** Do not mount the unit at 10 feet / 3 m when using the low sensitivity setting.

## WALK-TEST

Apply power to the unit. The power up self-test takes **3.7 minutes**. The LED flashes during power up self-test. Begin walk-testing when the alarm LED (DS1) goes out. (The unit is in the zone finder mode for the first 10 minutes.)

Walk across the protected area at the ranges to be covered. Two to four normal steps across the pattern should make the alarm LED light. Wait for the alarm LED to go out, then continue walk-testing. When there is no motion in the protected area, the alarm LED should be off.

## ZONE FINDER

The sensor will enter a 10 minute zone finder mode after a successful power up diagnostics test or a user initiated test. Either one of these tests takes approximately 3.7 minutes.

While in the zone finder mode, the installer can determine the precise protection pattern by further walk-testing the unit. The alarm LED will activate every time a zone edge is crossed.

**Important:** The MC-550 / MC-550T should be tested at least **once each year** to ensure proper operation.

## SELF-TEST

Ongoing self-test occurs every twenty-four hours. If a self-test fails, it retests every five minutes. Ongoing self-test does not flash the LED unless there is a failure. Power up and user initiated self-tests both perform the same functions. To perform a user initiated self-test, short the two self-test pads (refer to Figure 5).

The LED flashes once per second during the power up and user initiated self-test. If the unit fails any self-test, it will continue to flash the LED once per second.

## ALARM LED DISABLE (MC-550T Only)

To disable the alarm LED (DS1) after walk-testing the sensor, remove the jumper from position **J3** on the PCB. See Figure 5.

## SPECIFICATIONS

### Range:

50' x 40'  
15 m x 12 m

### Power requirements:

10 - 14 VDC  
20 mA, 12 VDC  
3V peak to peak at nominal 12VDC

### Alarm relay:

Form A (normally-closed)  
100 mA, 24 VDC

### Tamper switch:

(MC-550T Only)  
Form A (normally closed)  
25mA, 24 VDC

### RF immunity:

30 V/m  
10 MHz - 1000 MHz

### PIR white light immunity:

6,500 Lux

### PIR sensitivity:

jumper selectable  
(high, normal & low)

### PIR fields of view:

dual element  
22 long range  
6 intermediate  
3 lower  
2 look-down

### Operating temperature:

32° to 120° F / 0° to 49° C

### Relative humidity:

5% to 95% non-condensing

### Dimensions:

3-1/2" H x 2-1/2" W x 1-13/16" D  
9.0 cm x 4.4 cm x 4.5 cm

### Weight:

3.0 oz / 85.27 g  
Packaged product is 4.5 oz / 127.9 g

### Approvals/listings:

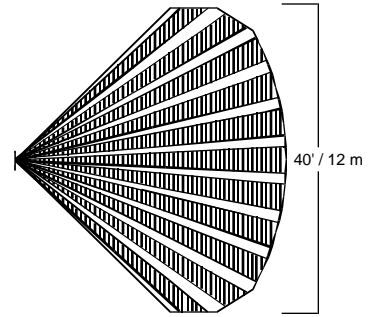
FCC/IC verified  
CE approved  
(EMC Directive: Residential, Commercial and Light Industrial)  
UL listed

**Important:** For UL certificated installation, the MC-550 / MC-550T must be connected to a UL listed power supply or UL listed control unit capable of providing a **minimum of four hours** of standby power.

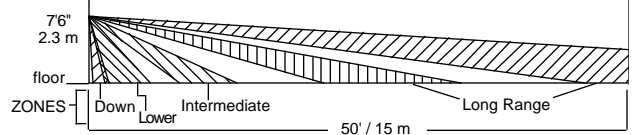
This device has been tested to compliance with the EMC Directive 89/336/EEC for Residential, Commercial and Light Industry applications, according to standards EN50081-1 and EN50082-1.

## PROTECTION PATTERNS

TOP VIEW  
Wide Angle Lens



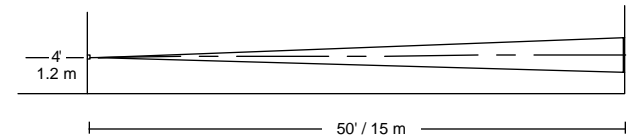
SIDE VIEW  
Wide Angle Lens



TOP VIEW  
Pet-Alley Lens

The TOP VIEW Pet-Alley lens is the same as the TOP VIEW Wide Angle lens.

SIDE VIEW  
Pet-Alley Lens



MTG HEIGHT	PCB POSITION		
	+1	0	-1
4' / 1.2 m	50'	N/A	N/A
76" / 2.3 m	N/A	50'	N/A
10' / 3 m	N/A	N/A	50'

**MC-550 / MC-550T RANGE CHART**  
50' / 15 m

**FCC Notice:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. The installer can also consult an experienced radio/television technician for additional suggestions, if necessary.

**IC Notice:** This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.