5897-35 RF DUAL TEC Motion Sensor Installation Instructions

GENERAL INFORMATION

The 5897-35 motion sensor combines dual technology motion detection with reliable 5800 wireless RF in one small package.

Within the protected area, the passive infrared (PIR) detector senses changes in infrared energy (such as body heat emitted by an intruder), and turns on the microwave detector which senses the motion. Both technologies must verify intrusion within a preset time interval, virtually eliminating false alarms.

To reduce current drain and prolong battery life, the microwave circuitry is dormant until the PIR detects a change in the infrared energy level.

In addition, the 5897-35 sensor features a supervision circuit that monitors the microwave technology. If a problem is detected, the sensor will go into alarm.

The 5897-35 sensor is also equipped with both a Fresnel lens and multi-segmented PIR mirror. This unique optical system provides dense PIR coverage from directly beneath the unit out to maximum range.

FEATURES

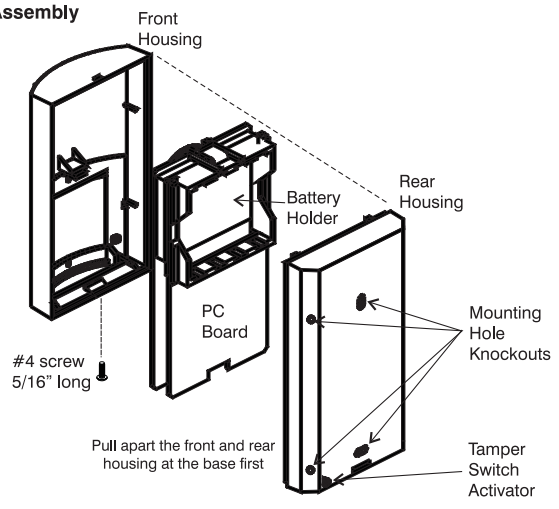
- Microwave/PIR technology
- Dual element PIR
- Three minute hold off circuit
- Cover tamper switch
- Automatic walk-test mode
- Simple installation
- 5800 Wireless technology
- Unique PIR optics
- Single edge PIR triggering
- Lithium batteries included
- Optional barrier and pet-alley lenses available

MOUNTING LOCATION

Select the best location in the room for both technologies. Aim the sensor toward the interior of the room, away from windows, moving machinery, and heating/cooling sources. Do **NOT** mount the detector near wire screens or large metal objects. We recommend that you verify the RF reception prior to permanently mounting the sensor.

Maximum range is obtained at a mounting height of 7'6" (2.3 m). Make sure the sensor has a clear line of sight to all areas you wish to protect. Infrared energy cannot penetrate solid objects. If the PIR is blocked, the unit will not alarm.

Figure 1
Assembly



MOUNTING PROCEDURE

Use the sensor's rear cover to mark the mounting holes. To remove the sensor's rear cover, use a small-blade screwdriver to push up on the latch through the slot in the bottom of the front housing. Gently pull the housings apart at the base first.

The printed circuit board (PCB) is mounted in the front housing. Do NOT remove the PCB.

Securely mount the rear housing at the desired location. When mounting the sensor on a wall, use the two knockout holes in the back of the rear housing. When mounting the sensor in a corner, use the knockout holes on the beveled corners of the unit. Remove the knock-outs, mark and drill the mounting holes, and mount the transmitter at the desired location. Install the batteries and replace the cover; secure the cover with a #4 (5/16-in.) screw (supplied).

INSTALLING THE BATTERIES

The 5897-35 operates on four 3V lithium batteries. Please note that the batteries must always be installed and replaced in a set of four! Acceptable battery types include Honeywell #466, Panasonic CR123A, Duracell DL-123A, or Sanyo CR123A. Four batteries, shipped with the unit, must be installed prior to testing. Proper orientation is shown in Figure 2. After battery installation, the unit requires a 60-second warm-up prior to normal operation.

NOTE: To prevent excessive battery drain during setup and installation, you should remove the batteries whenever the cover is open and the unit is not being tested.

SYSTEM TESTING

Opening the front cover of the 5897-35 signals a tamper condition and automatically places the unit in the walk-test mode. This also disables the three-minute hold off circuit. The unit remains in this mode for a period of 8 minutes after the cover has been replaced. There are two walk-test LEDs located at the bottom of the unit behind the lens, one on each side. These LEDs are only active while the unit is in the walk-test mode.

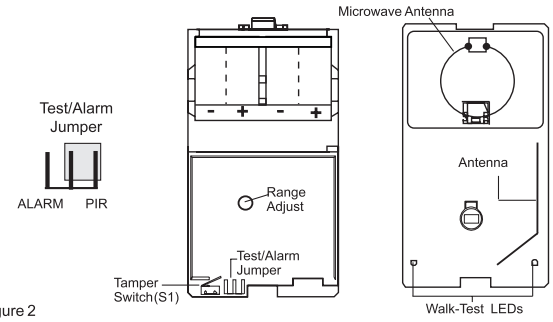


Figure 2
PCB Layout and Connections

A jumper at the bottom of the PCB, next to the Tamper Switch (S1), allows you to test the PIR section separately. Placing the jumper in the "PIR" position, as shown in Figure 2, allows you to walk-test the PIR without activating the microwave circuits. The range of the PIR detector is not adjustable. The PIR's field of view (range) is determined by the mounting height and the type of lens installed.

WALK-TEST

Walk-testing the 5897-35 motion sensor is a two-stage process. The first step is to walk-test the PIR. Walk across the protected area at the ranges to be covered. Two to four normal steps should make the LEDs light. Since the LEDs are connected in parallel, both LEDs will light at the same time. When there is no motion in the protected area, the LEDs should be off. The second stage is to adjust the range of microwave transmitter. For continued reliability, the sensor should be walk-tested at least once per year.

RANGE ADJUSTMENT

Returning the jumper to the ALARM position will reactivate the microwave circuits. Remember that as long as the cover is open, the hold off circuit remains disabled. In order to adjust the microwave, the PIR must first see motion, which will activate the microwave circuitry.

The microwave range potentiometer is located near the center of the PCB below the battery holder (refer to Figure 2). With the PCB oriented in its correct mounting position and facing you, turning the potentiometer clockwise will INCREASE the range of the microwave.

After determining the field of view for the PIR, set the microwave range potentiometer at MINIMUM by turning it counterclockwise as far as it will go. (Use a small screwdriver to turn the range potentiometer.) Then, with the test jumper in the ALARM position, walk-test the sensor, gradually increasing the sensitivity of the microwave until the desired range is obtained.

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MICROWAVE SUPERVISION

If the microwave technology stops sending or receiving signals, the sensor will lock into an alarm. The LEDs at the sensor, however, will not light. If the microwave regains its signal, the sensor will return to normal operation.

5897 SYSTEM PROGRAMMING

The 5897-35 DUAL TEC sensor must be enrolled into the system during installation.

To program the device:

1. Activate the test mode of the sensor by removing the front cover and re-installing it. (This will send a tamper signal and then a restoral to the receiver.)
2. Put the Control Panel into Zone Programming mode.
3. When you are prompted for the device serial number, either:
   a) Enter the 7-digit serial number through the keypad, or
   b) Wave your hand in front of the 5897-35 to cause an alarm, then repeat approximately 5 seconds later. (This causes a Fault and Restoral to be sent twice.)

The device should now be enrolled; you may return the system to normal operation. To confirm proper sensor operation, perform the Walk-Test described on the previous page.

CHANGING THE FRESNEL LENS

1. Open the cover and remove the printed circuit board (PCB). To remove the PCB, use a small-blade screwdriver and push down on the latch at the top of the front housing. Gently pull the PCB forward holding the board by the battery holder (see Figure 1).
2. Depress the retainer latch, and pull the lens retainer forward. (If necessary, use a small screwdriver to carefully depress the latch. Avoid excessive force, or the latch will break.)
3. Remove the existing lens.
4. Insert the pins of the new lens into the holes on the lens retainer as shown.
5. Replace the lens and retainer together (the feet of the retainer fit into the look-down window groove).
6. Snap the retainer latch back in place.
7. Reassemble the housing.

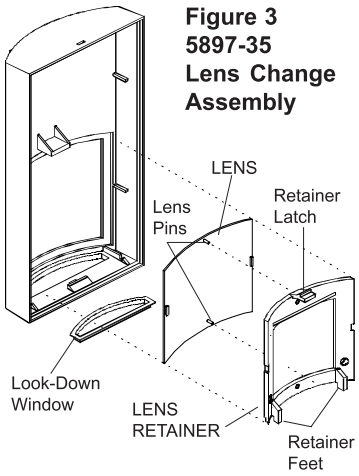


Figure 3 5897-35 Lens Change Assembly

NOTE: Two additional lenses are provided with the sensor. The pet-alley lens blocks lower PIR zones to exclude pets from the field of view; the barrier lens blocks outer zones for narrow applications.

When the pet-alley lens is used, install a look-down mask (provided) over the inside of the look-down window, and make sure to mount the sensor at a height of 4'.

UL COMPLIANCE

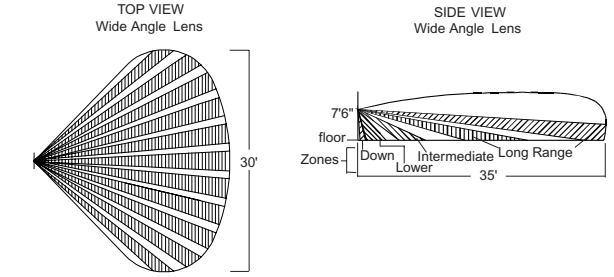
This device is compliant to UL639 Standard for Intrusion Detection Devices, when operating within the requirements as specified for the Listed RF Receiver/Interface Board Products and appropriately Listed Burglary Control Panel Systems or Combination Burglary and Fire Warning Control Panel Systems.

Refer to Figure 1 to install #4, 5/16-in. screw (supplied) as shown.

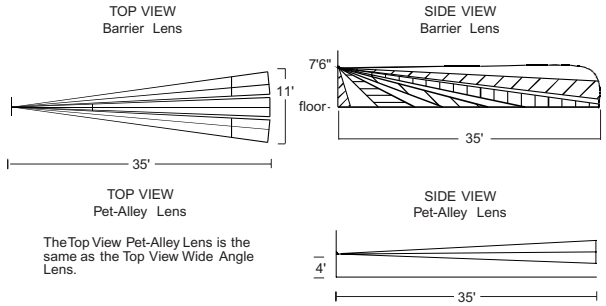
NOTE: The Pet Alley feature has not been evaluated by UL.

NOTE: Only one transmitting device per zone.

PROTECTION PATTERNS



PROTECTION PATTERNS FOR SPECIAL PURPOSE LENSES



5897-35 SPECIFICATIONS

Range:
35' x 30' (11 m x 9 m)

PIR fields of view (standard lens):
11 long range 7 intermediate
4 lower 2 look-down

Power requirements:
Four 3V Batteries (included). Replace Batteries only with HONEYWELL #466, Panasonic CR123A, Varta CR-123A, Duracell DL123A, or Sanyo CR123A (Lithium Manganese Dioxide)

Sensitivity:
2 - 4 steps within field of view

Dimensions:
5" H x 2-7/8" W x 2-5/16" D
(13 cm x 7 cm x 6 cm)

RFI immunity:
30 V/m, all mobile bands 10MHz - 1000MHz

Weight:
10 oz (283.5 g), without batteries

PIR white light immunity:
4,000 Lux

Operating temperature:
32° to 140° F (0° to 60° C)

Frequencies:
center band 2.45 GHz (microwave);
345 MHz (transmitter)

Approvals / Listings:
cULus Listed
FCC Certified (FCC Part 15)
IC Certified (RSS-210)

FCC NOTICE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a field disturbance sensor, pursuant to Part 15 of the FCC Rules. The user is cautioned that changes or modifications not expressly approved by Honeywell International Inc. could void the user's authority to operate this equipment.

NOTE: 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 these 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 the receiver; 3) connect the equipment into an outlet on a circuit different than that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for help.

P/N 5-051-667-00 Rev. C

Honeywell

Look-down Mirror Mask Installation Instructions

The Look-down Mirror Mask allows the sensor to exclude small pets from the field of view.

▶ To install the Look-down Mirror Mask:

1. Ensure the glossy side (text side) of the mask is facing the mirror.
2. Bend the mask as shown.
3. Insert the mask between the look-down mirror and pyro.
4. Push it down until it rests against the look-down mirror's base.