

EL-2650XL

The EL-2650XL is a wireless PIR sensor that is able to distinguish between permitted and non-permitted motion. This allows the occupants free movement within the premises while detecting intrusion via doors or windows. The sensor implements a feature to combat the problem of multiple transmissions, which drastically reduce the life of the batteries. After a transmission is made, the EL-2650XL initiates a delay of approximately three minutes during which transmissions will not be sent. The sensor operates in two selectable modes: Curtain and Directional.

Location of Detector

Consider the following before mounting the sensor:

- Select a location from which the pattern of the sensor is most likely to be crossed by a burglar, should there be a break in.
- Avoid a location that comes in direct contact with radiators, heating/cooling ducts or air conditioners.
- Do not place bulky objects in front of the sensor.

Caution: Do not install the sensor above beds, sofas, desks or in any area that people are likely to spend continued periods of time. If the occupant does not move within the delay time, an alarm will be generated when moving away from the protected area.

Installation Instructions

1. To open the housing, remove the cover screw and, using a flathead screwdriver, press the locking tab at the side of the unit. Remove the printed circuit board (PCB) by unscrewing the PCB screw.

Note: Do not touch the face of the PYRO sensor.

2. Set the receiver to Registration mode. Apply battery power by removing the isolator that separates the battery from the contacts on the battery holder. The sensor turns on and sends four transmissions in order to be registered with the system. Wait for the receiver to indicate that the transmitter has been registered successfully. Alternatively, the EL-2650XL can be registered to the receiver by manually entering the transmitter's serial number.

Note: The receiver allocates a transmitter number to each registered unit. Write this number and the number of the zone on the sticker provided. Affix the sticker inside the front cover for future reference.

3. After a warm-up period of 130 sec. indicated by both LEDs' blinking, the sensor automatically enters Radio Mode for 4 minutes approximately and sends transmissions every 8 seconds, then it enters Regular mode – see *Operation and Adjustment, Selectable Operation Modes*.

4. Knock out the mounting holes and test the transmitter from the exact mounting position before permanently mounting the unit. The EL-2650XL can be wall or ceiling mounted. **Note: The "Alarm" arrow on the PCB (See figures 1 and 2) must point inward (i. e. towards the protected area).** The recommended height is 2.2 m. **Note: If you choose mounting height other than recommended (which is not advised), please perform a walk test to check the lens coverage. The recommended mounting height is the best in terms of detection area.**

5. Attach the base to the wall with two screws. If using the rear tamper switch, insert a screw into the rear tamper hole (see *Figure 6*) instead of the lower mounting hole. When the detector is removed from the wall, the screw causes the tamper release to break away from the back cover and the rear tamper switch is released.

6. Mount the PCB at the required setting using the horizontal adjustment scale and tighten the PCB screw – see *Operation and Adjustment, PCB Adjustment*. Attach the front cover and replace the cover screw.

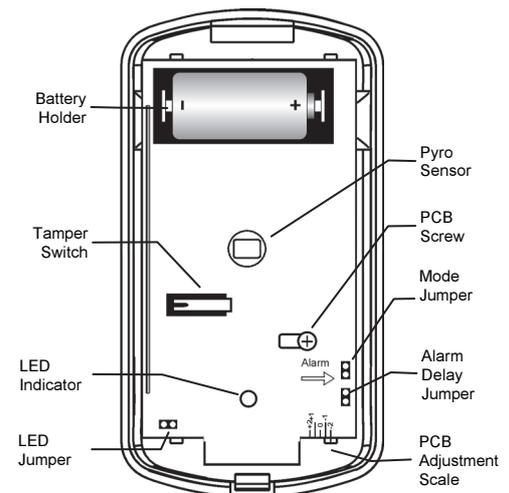


Figure 1: EL-2650XL (Cover Off)

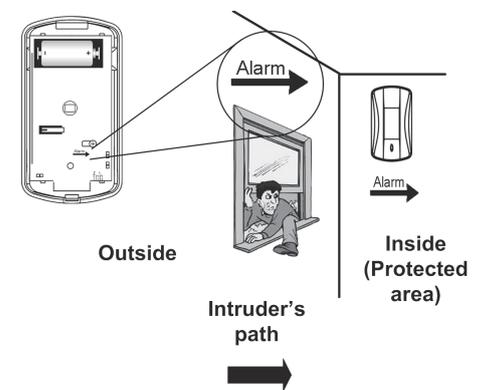


Figure 2: Correct Placement of the Detector

Operation and Adjustment

PCB Adjustment

PCB adjustment enables you to angle the infrared beams by changing the position of the pyro element in relation to the lens. To adjust the PCB, loosen the PCB screw and slide the PCB to the required position using the PCB adjustment scale as a guide. After adjusting the board, tighten the PCB screw. Slide the board towards -2 to position the beams closer to the wall. Slide the board towards +2 to position the beams further away from the wall. For the correct PCB adjustment, you must take into account the distance of the detector from the wall and the distance of the protected door/window from the detector – see *Table 1 (below)*. The settings in *Table 1* as illustrated in *Figure 3* are relevant both to wall and ceiling mounting.

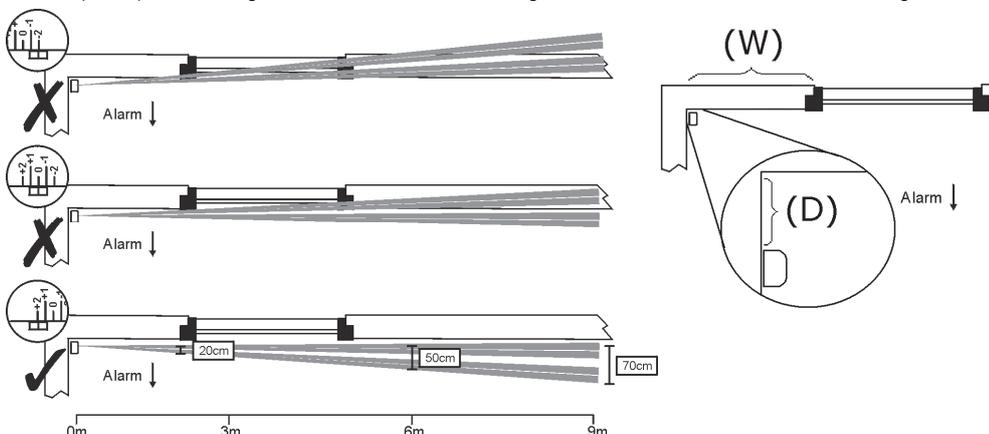


Figure 3: A typical installation where the detector is 5cm from the wall and 2m from the protected window. The top two diagrams show the lens coverage pattern for the detector when incorrectly adjusted to -2 and 0. The bottom diagram shows the PCB correctly adjusted to +2.

| | | Distance of Detector from Wall (D) | | |
|---|-----------|------------------------------------|------|------|
| | | 5cm | 25cm | 50cm |
| Distance of Door/Window from Detector (W) | Up to 2m* | +2 | 0 | -1 |
| | 4m | +2 | 0 | -1 |
| | 6m | +2 | 0 | 0 |
| | 8m | +2 | +1 | 0 |
| | 9m | +2 | +1 | 0 |

Table 1: Recommended PCB Adjustment Scale Settings for Wall and Ceiling Mounting

* It is not recommended to mount the unit less than 40cm away from the path of entry protected by the detector.

Walk Test

A walk test determines the coverage pattern of the detector. To perform this test, walk across the scope of the detector according to the detection pattern selected. Confirm that the LEDs activate and deactivate as described in Table 4. To launch the Walk Test from the *Radio mode*, after any transmission indicated by LED blinking, press the tamper switch and hold it until the green LED turns on then off (see Figure 4, step 1). Release the Tamper switch and wait until the red LED turns on and then off (see Figure 4, step 2). Press the Tamper switch once again. Both LEDs are lit momentarily (see Figure 4, step 3). The sensor enters the Walk Test mode for 4 minutes. During the Walk Test, wait for twenty seconds between movements. To launch the Walk Test from the *Normal mode*: Just open the sensor housing: the tamper is triggered and the sensor enters the Walk Test mode for 4 minutes. Walk test should be performed weekly.

Note: In Walk Test mode there are no delays.

Selectable Operation Modes

The sensor operates in two operation modes. In Directional mode, crossing the infrared beams is alarm-protected in one direction only. The protected direction is shown by the arrow printed on the PCB. In case of crossing the beams from the non-permitted side (ALARM), red LED is lit for a second. In case of crossing the beams from the permitted side (NO ALARM), green LED is lit for a second and the Alarm delay (see below) starts to count down. In Curtain mode, crossing the beams is alarm-protected in both directions. The Operation mode (Directional/Curtain) is selected using the Mode Jumper – see Table 2.

Alarm Delay

The Alarm Delay is a feature designed to allow the occupant to move freely within the protected area without triggering a false alarm. When approaching the protected wall, an alarm is not generated because the sensor's beams are crossed from the permitted direction. After detecting permitted motion, the sensor counts down the Alarm Delay time. This timer is re-triggered every time the sensor detects motion. During the Alarm Delay, the sensor permits motion in both directions. The duration of the alarm delay is selected using the Alarm Delay Jumper – see Table 3.

LED Indication

The LED indicator turns red to indicate non-permitted motion and green to indicate motion detection in either direction. In the event of an alarm, the LED turns red. To disable the LED, remove the LED Jumper, JP1 located next to the LED indicator – see Table 4. **Note: Do not disable the LED until you have successfully walk tested the sensor.**

PIR Supervision

The circuit operation of the PIR is checked once per hour. In the event of PIR failure the red LED flashes.

Battery Replacement: Open the housing by removing the front cover (see Installation Instructions), replace the battery, and close the front cover.

Note: Close the front cover immediately after each battery replacement.

Signals and Messages:

In case of a low battery (2.5 V and below), the sensor low battery condition is reported to the Control System and low battery message is displayed. When the rear tamper switch is released, the sensor sends a tamper condition to the Control System that generates tamper alarm.

Technical Specifications

Antenna: Built-in Internal Whip

Frequency: 868.35, 433.92, or 418 MHz

Power: 3.6V ½ AA Lithium Battery

Caution: Fire, explosion and severe burn hazard!

Do not recharge, disassemble or heat above 100°C.

Current Consumption: 30mA (transmission), 20µA (standby)

Pyroelectric Sensor: Quad Element

Maximum Range: 9m

Operating Temperature: -20° to 60°C

LED indicator: Jumper Selectable

RFI Immunity: 10V/m

Fire Protection: ABS Plastic Housing

Dimensions: 90 x 50 x 40mm

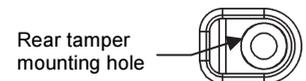
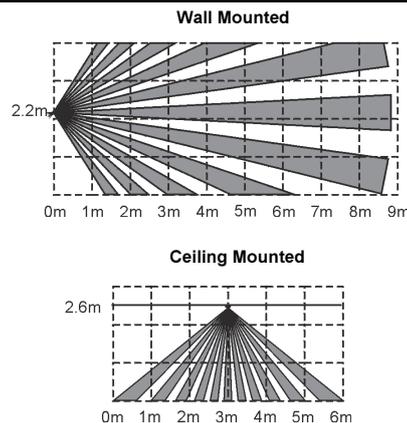


Figure 6: Rear Tamper Release

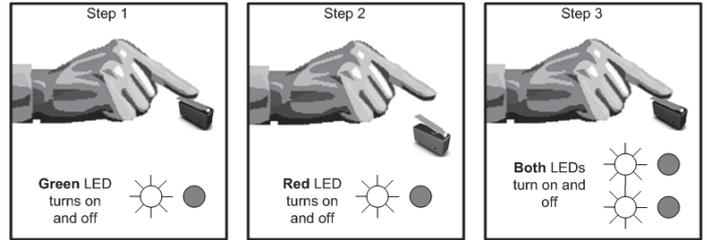


Figure 4: Launching the Walk test from Radio Mode

| Mode Jumper JP3 | Jumper Position |
|-----------------|-----------------|
| Curtain | Removed |
| Directional | Installed |

Table 2

| Alarm Delay Jumper JP2 | Jumper Position |
|------------------------|-----------------|
| 1 minute | Removed |
| 4 minutes | Installed |

Table 3

| LED | Indication |
|-------|----------------------|
| Red | Non-permitted motion |
| Green | Permitted Motion |

Table 4

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