

# ELK-6030P

## Wireless PIR with Pet Immunity

### APPLICATION & OVERVIEW

The ELK-6030P Wireless PIR Motion Sensor features Pet Immunity for small animals up to 40lbs. It is designed for use with control/transceivers that accept Elk's two-way technology; such as the ELK-M1XRFTW.

The dual element pyroelectric sensor in the 6030P detects movement within a specific coverage area, by sensing the infrared energy that is emitted from an intruder moving across the sensor's field of view. A change in the infrared energy creates a temperature change in the sensor's zones, which is then processed to determine if the occurrence qualifies as a legitimate motion detect event. If it does then the built-in radio will be triggered.

The two-way radio (RF) in the 6030P transmits alarm, tamper, supervisory, and low battery messages to the control/receiver. Each sensor has a unique TXID number which is enrolled into the control during installation. With its two-way capability, the 6030P radio listens after every transmission for a positive acknowledgment from the control. This makes the sensor very energy efficient since it doesn't waste battery power repeating transmissions unless they are not acknowledged.

Like all battery powered motion detectors, the 6030P has a mandatory sleep cycle function to help extend the battery life. After detecting motion, the sensor's radio will transmit the event to the control and wait for acknowledgment. Upon acknowledgment the sensor will enter the mandatory sleep cycle. During the sleep cycle time it cannot transmit additional events. There are two (2) time choices for the sleep cycle selected via DIP Switch #4. After the sleep cycle expires the sensor will once again be capable of transmitting a new event.

The 6030P introduces the industry's first Security/Convenience Light.™ This bright white LED projects a beam of light out in front of the sensor. The modes of activation/operation are: Quick blip when motion is detected and walk test mode is active. Flash during an audible alarm activation. On Solid for several seconds when Control is Armed Away and motion is detected. On Solid for several seconds when motion is detected (regardless of armed state) and Control Output #4 is On. Flash for several seconds by command from Control (use as a special attention grabber or general purpose indicator). On Solid for several seconds by command from Control (can be used to help illuminate the immediate area for cameras, etc.)

### PACKAGE CONTENTS

- 1 - 6030P PIR electronics assembly & back housing
- 1 - Standard swivel bracket, locking disc, screws & anchors
- 1 - Blanking plug
- 2 - CR123A Lithium Batteries
- 1 - Cover locking screw
- 1 - Bracket screw (#4 x 3/8", pan head, sheet metal)



# Installation and Setup Guide



**UNIQUE 'INDUSTRY FIRST'  
SECURITY/CONVENIENCE LIGHT™**

### FEATURES

- Wireless two-way communication
- Dual element pyroelectric sensor
- Pet Immunity up to 40lbs
- Selectable pulse count
- Selectable Hi/Lo range
- Excellent immunity from white light, RF, and ESD interference
- Bi-Color RF Acknowledge LED (Green + Org/Red)
- Security/Convenience™ LED (White)
- Long life Lithium batteries {supplied}
- Low battery trouble signal
- Sleep Cycle "Battery Saver" (2 time settings)
- Periodic (64 min.) Supervisory check-in
- Cover tamper protection
- Swivel mounting bracket included
- Optional deluxe 90° swivel bracket for ceilings sold separately

### SPECIFICATIONS

- Dimensions: 2.8"W x 4.4"H x 1.9"D
- Mounting Height: 6 1/2 to 7 1/2 ft
- Sensor: Dual element pyroelectric
- Coverage: Hi Range = 40 ft x 40 ft (12.2m x 12.2m) @ 90°  
Lo Range = 30 ft x 30 ft (7m x 7m) @ 90°  
20 dual element zones (10 Long, 4 intermediate, 4 mid, 2 short)
- Pulse Count: 1-2 or 3-4, selectable
- Sleep Time: Selectable 30 sec. or 120 sec.
- RF Signal Acknowledge Indication: Bi-Color LED
- Security/Convenience Light: White LED
- Warm Up Period: 10 seconds
- Operating Voltage: 3.0 Volts DC
- Battery Type & Size: 2 x Lithium CR123A
- Quiescent Current: < 10 µA
- Operating Temp: 32° to +120° degrees F
- Humidity: 95% RH (max.), non-condensing
- Frequency: 902 - 928 Mhz channel hopping



#### 4. SENSOR ENROLLMENT FROM ELKRP

4.1 Launch the ElkRP PC software and open the desired Customer Account file.

4.2 Click the "+" next to Zones (Inputs) to expand the view. Look to see if there are any existing wireless zone groups. If there are none then it will be necessary to add or create a new group. To create a wireless group, right click on **Zones (Inputs)** and click **New Wireless Zones**. Place a check mark in the box to be added, starting with Group 2. Click OK. Repeat if more wireless groups are required.

NOTE: The M1 Control requires all expanded zones to be defined in groups of 16. E.G. Zones 17-32 = Group 2, zones 33-48 = Group 3, etc. **Furthermore, when an M1XRFTW Two-Way Transceiver is included, it must always be enrolled at databus address 2 (the first expander).** This also means that the first group of wireless sensors should be defined as group 2. Since M1 allows a maximum of 144 wireless zones, the last potential wireless zone can never be higher than Zone 160. If a large number wireless zones is anticipated, it would be a good idea to avoid conflict with any future Hardwired Zones in the 17 to 160 range by NOT enrolling any Hardwired Zone Expanders (M1XIN) at any data bus addresses below 10.

4.3 Double click on **Wireless - Group \_** (the group just added) and double click one zone at a time to define the Zone Name, Definition, Type, Attributes, etc.

4.4 The next step is to enter the sensor's TXID and the other wireless setup data. This may be done directly from each zone definition screen (click the **Wireless Setup** button) OR from the separate Wireless Setup menu accessed from the folders column.

4.5 Place a check mark in the **Enabled** box.

4.6 Set Supervision type to "1" (Normal Supervision) for the 6030 Sensor. A setting of "0" means the control will not expect a supervisory check-in from the sensor. For additional details refer to Supervision on the previous page.

4.7 Skip the block titled: This device is a PIR (auto restore). **Do Not Enable.** The 6030P PIR will transmit a restore after each alarm as long as all functions return to normal. This M1 option is for other supported brands of wireless PIRs that do not transmit restorals.

4.8 Skip to the **TXID** box and enter the Sensor TXID that is printed on the small label attached to the sensor.

4.9 Skip to the **LOOP** box and enter a 2.

4.10 Click **Save**. Repeat the entire step 4 for each additional Wireless Zone and Sensor.

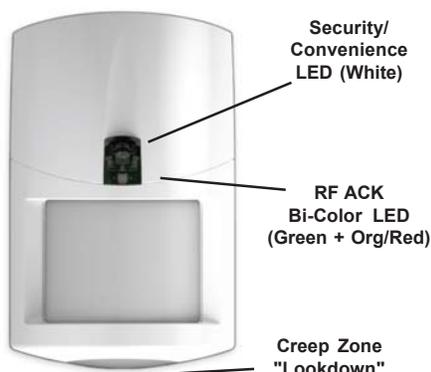


Figure 6. Front View of Sensor

#### 5. DIP SWITCH OPTION SETTINGS

	ON	OFF		
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1-2	3-4
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	HI	LO
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SH	LG
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	YES	NO
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	NO	YES
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	N/A

Factory Default Settings Outlined in BOLD

Figure 7. DIP Switches

##### PULSE COUNT (Switch 6)

- 1-2 Sensor must detect 1 or 2 events in the coverage area before an alarm is created.
- 3-4 Sensor must detect 3 or 4 events in the coverage area before an alarm is created.

##### RANGE (Switch 5)

- LO Sensor is set for the shorter detection range (approximately 30ft.)
- HI Sensor is set for the longest detection range (approximately 40ft.)

##### SLEEP CYCLE (Switch 4)

To extend battery life, a mandatory sleep cycle (2 time settings) begins after each alarm transmission. After the Sleep Cycle expires, there must be ~8 seconds of quiet (no movement) before the sensor will be allowed to detect and send another radio transmission.

- LG Long (120 secs.) Until this timer expires the sensor cannot transmit another event.
- SH Short (30 secs.) Until this timer expires the sensor cannot transmit another event.

##### SECURITY/CONVENIENCE LED (Switch 3)

- NO Sec/Convenience LED is NOT ENABLED except for the Walk Test and audible alarms.
- YES Sec/Convenience LED is ENABLED for other functions other than Walk Test and audible alarms. See back page for details.

##### RF ACK LED (Switch 2)

- NO RF ACK (Green) LED is NOT ENABLED except during the Walk Test Mode.
- YES RF ACK (Green) LED is ENABLED, and should blink Green upon a detect and positive acknowledgment from the control.

Green = Sensor transmitted and received a positive ACK (acknowledgment) from the Control/Transceiver.

Org/Red = Sensor attempted to transmit but did not receive an ACK (acknowledgment) from the Control/Transceiver.

##### FUTURE (Switch 1)

- N/A This switch is not currently utilized.

6. After enrolling the sensor into the control and setting the Option Switches, reposition sensor over the back housing and snap it into place. This action will activate the Walk Test mode for the next 10 minutes. Perform an immediate Walk Test according to the procedure that follows.

7. If the swivel mount bracket was used then it will be possible to adjust (fine tune) the Sensor coverage. If the swivel bracket was not used, and the sensor was fixed mounted to the wall, the coverage pattern is based on the mounting height and position.

8. After Walk Testing has been completed, secure the sensor to the back housing using the locking screw provided (small countersunk screw).

#### WALK TEST

Walk test is a way to verify that the sensor is operating as desired and in the optimum location. Slow and short steps should be taken across the coverage zones in both directions. When motion is detected, the White LED should blink once followed by a quick blink of the Green RF ACK LED. The Green LED indicate that the sensor transmitted an alarm signal and that the control/transceiver acknowledged that transmission. See paragraph titled: RF ACKnowledge LED

NOTE: Walk Test mode bypasses the Sleep Cycle timer allowing the Sec./Convenience LED and the RF ACK LED to operate regardless of DIP switches 2, 3, and 4.

There are two Walk Test methods.

1. **Sensor** Walk Test - This is started by opening and closing the sensor housing to violate the tamper switch. Sensor Walk Test will end after 10 minutes.

**NOTE: Sensor Walk Test can be forced to end by either arming the M1 (any arm mode) or by entering and exiting the System Walk Test mode.**

2. **System** Walk Test - This is started by activating Keypad User Menu **3 - Walk Test Area**. A wireless command is sent to each enrolled 6030 PIR telling it to join the System Walk Test mode. As each sensor is tripped the keypad will chime and display visual results. Press the asterisk (\*) key to end this walk test mode.

**NOTE: Two-way commands are not immediate. It can take several seconds for the sensor to receive the command to enter or exit the walk test mode.**

#### RF ACKnowledge (Green) LED

This LED is located in the clear lens on the sensor front. It's a bi-color LED providing visual status of the two-way acknowledge (response) from the control/transceiver. In bright lighting conditions this LED may be difficult to see. DIP Switch #2 allows the Green LED to be disabled for all operations except the Walk Test Mode.

**GREEN blink** = Sensor has successfully transmitted a violation (alarm) transmission to the transceiver and that signal has been received and acknowledged by the transceiver. The green blink is not provided for a sensor restore transmission..

**ORG/RED blink** = Sensor was not successful in transmitting after multiple attempts. **POSSIBLE CAUSES:** a)Control or M1XRFTW is powered off. b)M1XRFTW is not enrolled with control. c) Sensor is not enrolled. d)Distance between the sensor and the transceiver is too great. Check the following:  
 A. Verify that the M1 Control is powered on.  
 B. Verify that the M1XRFTW Transceiver is powered on and that it is enrolled with the M1.  
 C. Verify that the sensor is properly enrolled.  
 D. Trip a different wireless sensor to determine if it can successfully communicate.  
 E. If above steps are OK, temporarily move the failed sensor closer to the transceiver and retest. If sensor successfully communicates at the closer range then it may be necessary to:

1. Relocate the transceiver to a closer and more central location to this and all other sensors.  
OR
2. Purchase and install an additional "remote" transceiver to cover the area where this sensor was mounted.

#### DISABLING RF ACKnowledge (Green) LED

DIP Switch #2 allows the RF ACKnowledge (Green) LED to be disabled for regular operation, helping prevent unauthorized persons from learning the coverage patterns. It also helps extend battery life. Place DIP Switch #2 in the "NO" position to disable the RF ACK LED, or in the "YES" position to enable the RF ACK LED.

NOTES: DIP Switch #2 does not disable this LED from working in the Walk Test Mode.

## ANTI-TAMPER SWITCH

This switch detects the separation of the front housing from the backplate, resulting in a signal being transmitted to the control/transceiver that will cause the associated zone to become violated. Snapping the front housing back onto the backplate will transmit a restoral.

## FUNCTIONAL 'SYSTEM' TESTING

A system test should be done by physically walking across the 6030P coverage pattern while the system is fully armed. NOTE: Allow time for the Sleep Cycle Timer to expire before testing. Always notify the Central Monitoring Station prior to performing any testing.

## BATTERIES

The 6030P holds 2 x CR123A Lithium batteries. The estimated service life is 5 to 7 years in a typical residential installation with the Sleep Cycle set to LG (Long),

Battery #1 (lower) is supervised for low voltage. When the sensor detects the voltage has reached 2.6 VDC or less (under load), a Sensor Low Battery trouble will be transmitted to the control/transceiver. This trouble will be attached to all future transmissions until fresh new batteries are installed. Battery #1 is the primary power source for all critical functions (motion detect and radio transmission) of the 6030P sensor.

Battery #2 (upper) is not-supervised for low voltage. This battery is a secondary (reserve) power source for the 6030P critical functions, but it is the primary (sole) power source for the White Security/Convenience LED. The White Security/Convenience LED will not operate without a good battery installed in Battery #2 location.

We strongly recommend installing a battery in both locations. These 2 batteries are electrically isolated in such a way that critical functions of the 6030P can draw power from either battery, but the White Convenience LED can only draw power from Battery #2.

To clear a sensor low battery trouble condition, remove old batteries and WAIT AT LEAST 20 seconds before installing new batteries. Once the new batteries are installed, trip the sensor a couple of times. This should send an "all good" and clear the low battery trouble.

**Caution: Excessive use of the White Security/Convenience LED will reduce the life of Battery #2. More importantly, because the 6030P sensor is able to tap into Battery #2 for secondary power, any reduction of its life naturally reduces the overall operational life of the sensor. If maximum sensor operational life is the top priority, the Security/Convenience LED may be disabled by turning DIP Switch #3 OFF.**

## BATTERY REPLACEMENT

Use only approved 3V Lithiums. Replace both batteries at the same time and with same date code if possible. Replacements can be obtained from Alarm Distributors.

1. Remove sensor from back housing.
2. Remove both old batteries from sensor.
3. **WAIT AT LEAST 20 SECONDS** before installing new batteries. **Observe correct polarity** when installing new batteries. Do not bend or damage the metal battery holder contacts. Approved 3.0 Lithium Batteries are: Panasonic CR123A, Duracell DL123A, Varta CR123A,
4. Re-test sensor operation with the control.

**BATTERY WARNING: Risk of fire, explosion and burns. Do not attempt to recharge or disassemble. Do not incinerate or expose to heat above 212° F (100° C). Dispose of used batteries properly. Keep away from children.**

## ACTIVATING THE WHITE

### SECURITY/CONVENIENCE LIGHT™

The Security/Convenience Light (White LED) illuminates out the sensor front and has several operating modes: Quick blip in walk test when motion is detected. Flash during audible alarms. On Solid when control is armed to Away and motion is detected. On Solid when output 4 is ON and motion is detected. Flash by command from control. Solid ON by command from control. DIP Switch #3 allows the White LED to be disabled for most modes. **Note: This LED is never disabled in Walk Test.**

**Note: Most of the Security/Convenience Light modes require two-way commands from the M1 Control. Up to 8 seconds (typical) may be required before a two-way command is received. Be prepared for this delay during testing and operation. Do not expect instantaneous reaction on these commands.**

#### • Flash during audible alarms

Audible alarms (not Silent 24hr Police) will make the White LED flash. This continues until: the alarm cutoff timer expires, Control is disarmed, Battery #2 expires, or a rule based White LED command expires. If motion is detected, the flash will change to solid for about 17 seconds. Audible alarm activation can only be disabled by removing Battery #2, NOT via DIP Switch #3.

#### • On Solid if Armed to Away and Motion Detected

Any motion detected while the control is armed to AWAY mode will make the White LED turn On solid for about 18 seconds. **NOTE: DIP Switch #3 must be ON**

#### Activations using ElkRP Rules

The White LED can be controlled using ElkRP Rules and M1 Outputs 4, 5, & 6. These 3 outputs are not physically available on the M1 board and can therefore be used as phantom outputs. The 6030 detects the state of these "phantom" outputs and responds as follows:

#### • On Solid if Motion Detected [M1 Output 4]

If Output 4 is ON, any detected motion makes the White LED turn On for about 17 seconds. Continued motion will restart the time. Use a ElkRP rule to turn Output 4 On for a time, date, or condition. When Sunset - Then Turn Output 4 On Use a second ElkRP rule to turn Output 4 Off when this LED action is no longer desired. When Sunrise - Then Turn Output 4 Off **NOTE: DIP Switch #3 must be ON.**

#### • Flash - on command [M1 Output 5]

Turning M1 Output 5 On commands the 6030 to flash its White LED for about 30 seconds. Use a ElkRP rule to turn Output 5 On for a specific time, date, or condition. When 5:30PM (closing time?) - Then Turn Output 5 On for 38 seconds. The 38 seconds allows for a full 30 seconds of flash and then turns the output back off. To repeat this command the output should remain Off for at least 8 seconds. **NOTE: DIP Switch #3 must be ON**

#### • Solid On - on command [M1 Output 6]

Turning M1 Output 6 On commands the White LED to go Solid On for about 17 seconds. Use a ElkRP rule to turn Output 6 On for a specific time, date, or condition. When Entry Delay Starts - Then Turn Output 6 On for 25 seconds The 25 seconds allows for a full 17 seconds of solid and then turns the output back off. To repeat this command the output should remain Off for at least 8 seconds. **NOTE: DIP Switch #3 must be ON**

#### Rule Examples for the Security/Convenience Light:

- Whenever Sunset  
Then Turn Output 4 On.
- Whenever Sunrise  
Then Turn Output 4 Off.
- Whenever Time is 6:00pm (e.g. flash for dinner time)  
Then Turn Output 5 On for 38 seconds.
- Whenever Entry Delay Starts  
Then Turn Output 6 On for 25 seconds.

## OPTIONAL DELUXE 90° SWIVEL MOUNT

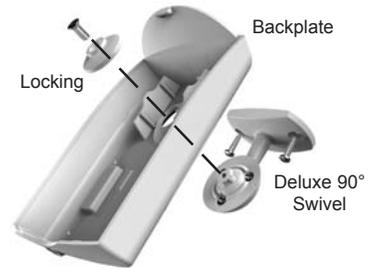


Figure 8. Deluxe 90° Swivel Bracket

This deluxe 90° swivel bracket may be purchased and used for adjusting the sensor at up to a 90° offset from the mounting base.

**WARNING: DO NOT TILT the 6030P sensor down as that will negatively affect the Pet Immunity features.**

## LIMITATIONS

While the 6030P Passive Infrared (PIR) Motion Detector is a highly reliable intrusion detection device, it does not offer guaranteed protection against burglary. Any intrusion detection device is subject to compromise or failure to warn for a variety of reasons:

PIR Detectors can only detect movement within a specific coverage area as diagrammed in this manual. To detect movement, the PIR Detector senses the infrared energy that is emitted from an intruder moving across the sensor's field of view.

PIR Detectors do not provide volumetric area protection. They create multiple beams of protection. Intrusion can only be detected in unobstructed areas covered by those beams.

PIR Detectors cannot detect motion or intrusion that takes place behind walls, ceilings, floors, closed doors, glass partitions, glass doors, or windows.

The radio transceiver only provides communications. It does not have anything to do with detecting motion.

The 6030P PIR is not a Life Safety device. The Security/Convenience Light feature is not a substitute for, nor should it ever be utilized as a substitute for a visual notification appliance.

## LIMITED WARRANTY

The 6030P Wireless PIR Sensor is warranted to be free from defects and workmanship for a period of 2 years from date of manufacture. Batteries used with wireless devices are not warranted. Elk makes no warranty, express or implied, including that of merchantability or fitness for any particular purpose with regard to batteries used with wireless devices. Refer to Elk's website for full warranty statement and details.

#### FCC AND IC COMPLIANCE STATEMENT:

This device complies with Part 15 of the FCC Rules and Industry Canada License-Exempt RSS Standards. 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émission par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

ELK-6030P Wireless PIR FCC ID: TMAELK-6030X  
IC: 4353A-6030X

NOTE: ELK PRODUCTS IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.