

# ELK-6023 Wireless Recessed Door Sensor



## SPECIFICATIONS:

Frequency: 902 Mhz - 928 Mhz frequency hopping  
 Dimensions: .75"D x 2.5"L Mag: .75"D x 5/8"L  
 Maximum Operating Gap: 3/4"  
 Operating Temperature: 32° to 120° F (-0° to 49°C)  
 Acceptable locations: Wood (Non-metal) or vinyl doors only  
 Relative Humidity: 5-85% Non-Condensing  
 Battery: 3.6V Lithium 1/2 AA size - See Battery Installation  
 Tamper Switch: Circuit Board Cover.

## Sensor Location and Mounting

Mount the 6023 sensor in the door frame (jamb) and the magnet in the door opposite the sensor. An ideal spot is 4 to 6 inches down or over from the top corner of the door's latch (lock) side. Best wireless coverage is achieved by mounting the sensor at least 5 ft. above the finished floor. It is important for there be at least a 1/8" gap between the door and the jamb to accommodate the sensor and magnet mounting flanges. Note: A door's weight will generally cause it to sag away from the hinge leaving the most gap at the top of the door on the latch (lock) side.

NEVER mount this sensor on the hinge side of a door as the operating gap may not be sufficient to cause an alarm. NEVER mount this sensor in a metal door or jamb as metal will negatively affect wireless performance. Observe temperature and humidity specs. Do not install in areas with high moisture/humidity

Read and follow the directions below before attempting any installation, including drilling any holes. And use caution when drilling to avoid striking or drilling into any door glass or sidelights.

- Carefully remove the sensor cover (end cap) using a small flat screwdriver or fingernail in the slot provided. Gently pry upwards being careful not to drop the cap.
- Gently grasp the circuit board edges using fingertips ONLY and remove it from the housing. Non-metallic tweezers may be used if the board does not easily slide out.
- Enroll the sensor board into control using either of the two methods in next section. After successful enrollment slide the circuit board back into the slots provided in the housing. Gently push but **Do Not Force!** Replace the end cap.
- Hold the sensor close to the desired location and verify that it operates properly. Do not drill any holes or mount the sensor until proper operation is confirmed at this location.
- At the mounting location draw a pencil line across the jamb from the door stop to the edge. Draw another line on the door edge directly opposite the one on the jamb. On both lines measure back a distance of 1/2 the thickness of the door and place vertical marks. These will be the centerline drill points. Be sure to allow for the thickness of any weatherstripping that may be present.
- Use a sharp brad point or paddle bit to drill a hole 3/4" diameter by 3" deep at the jamb centerline mark. Be careful not to chip or tear the wood finish. Remove all sawdust from the hole.
- Slide the sensor assembly into the drilled hole until the flange touches the jamb. **Do Not Force!** Secure the sensor flange using ONLY the #4 stainless flat head screws provided.
- Move the door to a nearly closed position and check or adjust

## APPLICATION

The ELK-6023 Wireless Recessed Door Sensor is the ultimate wireless security device for discriminating customers. It mounts into a 3/4" drilled hole in a wooden door jamb and becomes nearly invisible once the door is closed. It features Elk's Industry Leading Two-Way Technology with positive signal acknowledgment, extended range, and long battery life. It works with Wireless Transceivers and Controls that accept Elk's two-way technology; such as, the ELK-M1XRFTWM. Each time the 6023 transmits it sends a unique TXID identifier and a Loop number.

The ELK-6023 is intended to be installed in accordance with: The National Electrical Code, ANSI/NFPA 70.

IMPORTANT: An ELK-M1XRFTW Receiver must be installed and enrolled with the M1 Control before any attempt to install or enroll wireless sensors.

the pencil lines on the door edge so they align with the center of the sensor. Use a brad point bit to drill a hole 3/4" diameter by 1" deep at centerline mark. Remove any sawdust and press fit the magnet into the hole. A small drop of RTV sealant may also be used to hold it in place.

## Enrolling via M1 Keypad Installer Programming

- Enter **M1 Keypad Installer Programming** and navigate to Menu: **14-Wireless Setup**
- Press right arrow, then scroll up to Sub-Menu: **3:Learn Sel WirelessTransmtr**
- Press right arrow, then scroll or select a unused/available **WZone** (wireless zone).
- Press right arrow to **Lrn** (Enroll) a new sensor.
- Insert the Battery into the sensor as soon as the keypad displays: **Push Transmitter Button**. The M1G voice will speak; "Press Transmitter button for zone xx".  
**NOTE: If battery is already installed; remove it, wait 20 seconds, then re-insert.**
- Upon successful enrollment the Keypad will chime and briefly display the 6 digit TXID code of the sensor. If enrollment fails the TXID will not display. Should this happen remove the battery and wait 15 to 20 seconds before re-inserting. In certain instances it may even be necessary to repeat steps 3 - 6.
- The Rapid-Enroll feature will auto advance to the next wireless zone in sequence and wait for the next sensor enrollment. Simply repeat step 5 for each additional sensor.
- To end Rapid-Enroll after all wireless zones (sensors) have been enrolled press the ELK key one time.
- Set the Loop Number to 2. Loop 2 tells M1 to process this as a single "built-in" reed switch. Since the 6023 is only have a single reed switch, M1 should accept and process the loop default 0 as a 2 without it being changed for 0 to 2. We suggest verifying this and while there going ahead and changing it to 2. To review (or change) the Loop #, scroll up or down to the desired M1 wireless zone and press the left arrow. The screen will display a 9 digit number (TXID in decimal) followed by **Loop=**
- Supervision** - For wireless Burg sensors the supervision should be set to 1=Normal "Burg". This is the factory default setting for all wireless zones. To view or change the Supervision value, press the ELK key to locate Sub-Menu: **2:Xmit Transmitter Opt**. Press the right arrow and scroll to the wireless zone, then press right arrow to select.

**ZONE DEFINITION:** After all wireless zones have been enrolled proceed to Menu: **5 - Zone Definitions** to program the name, zone type, and any desirable options.

## Enrolling from ElkRP Software

- Launch ElkRP and open the desired Customer Account file.
- If there are no wireless zones currently in this M1 then you will need to create a group of 16 wireless zones. In the folders column right click on **Zones (Inputs)** and then click **New Wireless Zones**. Place a check mark in the box beside the desired group, then click OK. Repeat if additional wireless groups are required. All expanded zones must be defined in groups of 16. The M1XRFTW wireless must always start at Zone 17 (Group 2) and the last wireless zone CANNOT be higher than Zone 160 (Group 10).

**Note: M1 only allows Zones 17 to 160 to be used for wireless zones (max. of 144 wireless sensors). If a large number of wireless zones are expected, avoid conflict with any future Hardwired Zones in the range of zones 17 to 160 by NOT enrolling any Hardwired Zone Expanders (M1XIN) at data bus address 10 or lower.**

- Double click on **Wireless - Group \_** (the group just added), then double click one zone at a time to define a name, type, and options. Repeat for each wireless zone. It is more time efficient to use ElkRP to program the Zone Definitions (name, type, and options) before moving to the Wireless Setup for entering the TXID and Loop number.
- From the Folders column double click on **Wireless Setup** to setup and enroll the wireless sensors.
  - Click the **Transmitters** tab, then double click a zone.
  - Place a check mark in the **Enabled** box.
  - Set Supervision type as: 1=Normal "Burg" Supervision  
You will notice there are 2 other supervision options displayed: 0=Non Supervised & 2=Fire Supervision
  - Skip down to the **TXID box** and enter the Sensor TXID from the printed label located on the sensor.
- Skip to the LOOP box and enter a 2. VERY IMPORTANT - Loop 2 tells M1 to process this as a single "built-in" reed switch.**
- Click **Save**. Repeat the entire step 4 for each additional Wireless Zone and Sensor. Remember to click "Send" to transmit the new changes to the M1 Control.

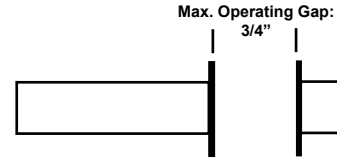


Figure 1. ELK-6023 Mounting Gap and Alignment

**CAUTION: Do not reverse the battery polarity!**



Figure 2. ELK-6023 Circuit Board & Battery

## Operational Testing

A two color LED on the sensor circuit board displays feedback of transmission status. While useful during installation and troubleshooting it is not viewable after sensor is installed.

## GREEN blink = Good

Sensor has successfully transmitted a violation (alarm) transmission to the transceiver and that signal has been received and acknowledged by the transceiver.

## RED blink = CAUTION

Indicates that sensor was unable to communicate with the transceiver after multiple repeated attempts. The distance between the sensor and the transceiver may be too great. Another possibility is that the transceiver is disconnected or powered off. Try the following troubleshooting steps:

- Verify transceiver is on with its status LED blinking.
- Trip another sensor to determine if it can successfully communicate with the transceiver.  
If steps A & B pass, try moving the sensor closer to the Transceiver and re-test. If sensor communicates at a closer range then one of two solutions may be needed:
  - Relocate the transceiver to a closer and/or more central location to this and all other sensors.
  - Purchase and install an additional "remote" transceiver to cover the area where this sensor was mounted.

Per UL a complete test of the security system and all zones should be performed once a week. The zones may be walk tested using the M1 Keypad Menu **3 - Walktest Area**.

## Limited Warranty

The 6023 Wireless Recessed Door 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.

## Battery Installation and Replacement

Low Battery trouble will be transmitted when the sensor battery needs to be replaced. Approved 3.6V Lithium Batteries are:

**Xeno XL-050F**

- Carefully remove the sensor cover (end cap) using a small flat screwdriver or fingernail in the slot provided. Gently pry upwards being careful not to drop the cap.
- Gently grasp the circuit board edges using fingertips ONLY and remove it from the housing. Non-metallic tweezers may be used if the board does not easily slide out.
- Remove old battery and **WAIT AT LEAST 20 SECONDS** before installing the new battery. **Observe correct polarity** and be careful not to bend or damage the metal battery holder.
- Slide circuit board back into the slots provided in the housing. Gently push but **Do Not Force!** Replace the end cap.
- Test sensor operation with panel. Trip sensor several times to send an "all good" and clear the low battery trouble.

**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.**

## 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ELK-6023 Wireless Recessed Door Sensor FCC ID: TMAELK-6023 IC: 4353A-6023

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