

## Keiron PRO Motion Detector Introduction

The Keiron PRO Motion Detector uses a passive infrared (PIR) sensor to detect motion, then transmits an alert to another device in the Keiron PRO family. Depending on your purchased configuration, this alert may be used to trigger:

1. A Keiron PRO audio device (gunshots, screams, instructions, warnings etc)
2. A Keiron PRO motion actuator to create some physical response
3. A Keiron PRO Swinger target
4. Other compatible devices

Advanced settings (such as channel selection, auto-power off settings ) are performed by remote command, typically by using a PRO Timer. This allows for fast set up time when changing a range layout, or reconfiguring a system.

There is a minimum period of 15 seconds between activation events.

## General notes on detection

The Keiron PRO Motion Detector is designed to be used indoors, under typical indoor lighting conditions through to complete darkness (for low light training). The device uses a passive infrared (PIR) sensor for detection. PIR sensors are commonly used in alarm systems and automatic lighting applications. The sensor works by measuring infrared energy emitted from objects in its field of view. When this energy changes, such as when a person walks past the sensor, the change in radiated heat triggers the unit.

## Placement and Sensor Information

The sensor sits in the middle of the device and may be identified by the white, round Fresnel lens cover.

The range is up to 9 metres and the field of view is approximately 160 degrees. When placing the sensor any solid object may be used to block the sensor and accordingly restrict the field of view, so it is easy to set up a limited detection area to trigger a specific function. Remember if you can see the sensor, the sensor can see you!

Careful placement will prevent false alarms. Do not place the sensor with a visible view of a window or some other heat source. If using infrared lasers to shoot the Keiron PRO targets, position the Motion Detector away from Keiron PRO targets (so it does not “see” the infrared laser) and cause a false alarm. Do not mount the unit under an air-conditioner or heater.

## Controls:

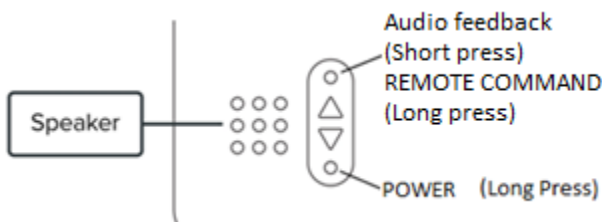


Figure1: Controls

## Operation Summary

With the motion detector positioned in the desired location, turn on the unit by long pressing the bottom button. The unit will perform a self test, broadcast system information such as battery level, and is then ready for use. A delay after power on of 15 seconds prevents the unit from triggering inadvertently by the user. This allows the user to position the unit, turn it on then get clear.

The top button may be used to toggle the beeper on and off. If the beeper is turned on, it will sound each time the unit detects motion. This is useful for checking the detection area and may be used to set the unit up before pairing with other devices, or before powering up other devices. Once set up, if desired the beeper may be turned off by pressing the top button. In all cases, when motion is detected the unit will transmit the trigger information.

Each time motion is detected, a trigger signal is sent to other Keiron PRO devices to inform them that motion was detected. After each trigger, a time delay is activated to allow the shooter to move on, and to prevent multiple detections for the same event.

If required, set the channel to include the unit in a logical Keiron PRO system. See following sections below for more detail.

When finished, power the unit off by long pressing the bottom button.

If a long beep followed by several short beeps are heard, then an error has occurred. The long beep alerts you to an error condition, and the number of short beeps signifies the error. Please see the errors section for more information.

## Keiron PRO Wireless Network

All Keiron PRO elements forming a logical system must be configured to be on the same channel. This allows multiple systems to co-exist, and ensures reliable operation.

If required, place the Motion Detector into “REMOTE COMMAND RECEIVE” mode by long pressing the top button, and send the channel to be used from the system controller (for example a PRO Timer)

### Audio Indication:

A short press of the top button toggles the beeper on and off. The system will always transmit a trigger (the radio cannot be turned off).

### Remote Command (Receive):

A long press of the top button (1.5 seconds) puts the Motion Detector into a “REMOTE COMMAND RECEIVE” mode. In this mode, the Motion Detector will not respond to movement, and will wait for a command from another Keiron PRO device (for example, a PRO Timer). The beeper will chirp every second, indicating that the unit is waiting for a command. Once the command is received, the system will beep to acknowledge, the command will be performed and normal operation is then resumed. The REMOTE COMMAND RECEIVE mode may be cancelled by any button press.

Use this feature to set the active radio channel and the automatic power off idle period. See Keiron Speed PRO or PRO Timer for more information on sending commands to the Motion Detector.

## **Power ON/OFF:**

A long press on the bottom POWER button turns the unit ON and OFF. When turning on, the unit performs a self test then starts a 15 second delay timer. A single beep while holding down the bottom button signifies shutting down. 3 short beeps while holding the bottom button signifies powering on.

By default, the unit will turn itself off after 1 hour of no activity. The automatic turn off period may be set from 1 hour to 12 hours, via a remote command from (for example) a PRO Timer.

## **Other:**

There is no command associated with a short press on the bottom button, or a press of both buttons.

## **Transmit Power:**

There is no manual setting for this, as the Keiron PRO wireless radio protocol automatically adjusts the power output for best battery life and reliable operation.

## **Information Broadcast:**

The Motion Detector will broadcast it's status when inserting batteries or when turning on. The serial number, battery voltage, software revision, active time and reset time is sent and may be displayed on a PRO Timer.

## **Pairing:**

Each time this unit senses motion, it sends that information to the Keiron network, and the paired device will then act on it.

There are therefore no specific extra actions to pair this unit with any other Keiron PRO unit – follow the directions for the product that you wish to pair with to put it in pairing mode, and activate this device by walking in front of it or waving a hand over the sensor.

## **ERRORS:**

Any errors that may occur are reported by beeping and flashing. To draw attention to the error, a long beep followed by a pause is first issued to alert the user to a problem, then the error code is beeped. This allows the user to take note that an error has occurred, and then count the beeps.

1 long beep: Power save timeout (turning off). After the set period of no activity elapses (default 1 hour), the unit will turn off to conserve power.

3 beeps: Battery low. When the 2 x AA batteries are depleted, the unit will turn itself off, both to prevent erratic operation and also to protect the unit from electrolyte leaks. (batteries leak when flat). Remove the batteries as soon as possible to prevent damaging the unit.

6 beeps: TX failure. Contact supplier.

7 beeps: Radio failure. Contact supplier.

8 beeps: Radio failure. Contact supplier.

9 beeps: Voltage regulation circuit unserviceable (undervoltage). Contact supplier.

10 beeps: Voltage regulation circuit unserviceable (over voltage). Contact supplier.

**Known bugs:**

None