

# Pet-Immune PIR Motion Detector UNUM™

## Operation and Specifications

The PI-PIR Motion Detectors UNUM are professional state-of-the-art motion sensors engineered with the world's best components and materials. Every aspect of these sensors provides the most reliable motion sensing, yet with freedom from false alarms. Additionally, the UNUM series introduces to the market the only sensors with a trendy invisible lens--completely integrated into the front cover, thanks to E.L.T.™ (Embedded Lens Technology). As a benefit of decades of experience in designing professional lenses, E.L.T.™ allows the formation of lens and front cover in a gracefully unified design. The PIR side starts with a EvenEye™ lens and a top-quality infrared detector. Next, a modern DSP ASIC (patent-pending) converts the infrared detector signal into digital form, for best reliability and stability. Finally, the signal is evaluated by the ASIC's HighBar™ processor, for "best-in-class" false alarm rejection with excellent intruder detection.

### SENSOR INITIALIZATION

Following power-on, PI-PIR Motion Detectors UNUM sensor are fully operational after a one-minute warm-up.

### WALK TEST

**Note:** The PI-PIR Motion Detectors UNUM should be tested once per year.

Enable the LED (JP in "LED" position). If the LED is not enabled, then, without removing power, set JP to "LED". Walk across the monitored area (within the sensor's optical fields-of-view). With sensitivity set at STANDARD, the LED should turn ON (for Alarm) after about three to five normal steps. With the sensitivity set at HIGH, the LED should turn ON (for Alarm) after about two to four normal steps. Each time the LED turns ON, wait for it to turn OFF. Then, wait 12 seconds before continuing the walk-test. When there is no motion in the monitored area, the LED should remain OFF.

### ALARM PROCESSING

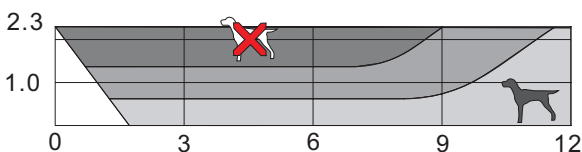
Dual-element detector fields-of-view alternate between (+) and (-) polarity. HighBar™-qualified signal events are counted as "pulses" exclusively when polarity alternates. Depending on sensitivity setting, (+,-), (-,+), (+,-,+) or (-,+,-) will cause an alarm.

### PET IMMUNITY

The PI-PIR Motion Detectors UNUM is designed to allow the presence of pets (10Kg or lighter) without signaling an alarm. It includes a special micro-element lens array that produces much stronger optical signals for humans than for pets 10Kg or lighter. Furthermore, the optical sensitivity of each PI-PIR Motion Detectors UNUM is factory-calibrated to ensure accurate discrimination between humans and pets.

**NOTE:** Pets come in many varieties. Some pets (especially larger ones with very short hair), even if lighter than 10Kg, may produce enough infrared radiation to cause alarms. PI-PIR Motion Detectors UNUM users are strongly advised to test the sensor with their own pets, in order to verify that the PI-PIR Motion Detectors UNUM will not signal an alarm when their pets are moving within its fields of view.

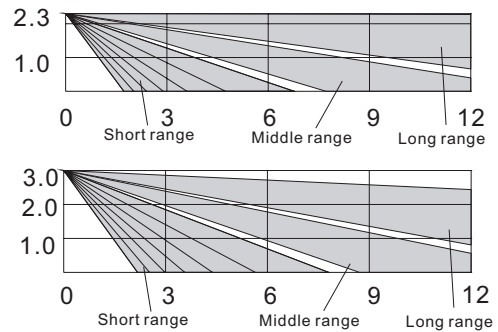
The diagram below shows the PI-PIR Motion Detectors UNUM's zones of greatest human/pet discrimination. The PI-PIR Motion Detectors UNUM should be mounted so that pets will occupy only the lighter-colored spaces.



### SPECIFICATIONS

**Range:** 12 meters in sensor-facing direction  
12 meters at 45° angle from sensor-facing direction

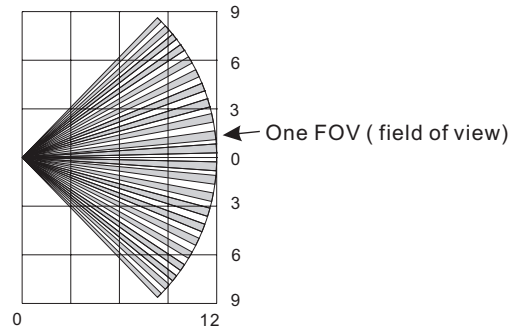
**Sensor Optical View Pattern (side view, in meters)**



**Optical Fields-of-View:**

Long-range	Mid-range	Short-range
44	36	18

**Sensor Optical View Pattern (top view, in meters)**



**IR Sensor:**

Dual-element

**Power Supply:**

8-16 Vdc; 12 mA at 12 Vdc

**Alarm Relay:**

Solid state, Form A (NC).

50 mA, 30 Vdc

**Tamper Switch:**

Form A (NC). 50 mA at 30 Vdc

**Housing Material:**

Base: ABS

Cover: HDPE

**Dimensions:**

113 x 60 x 45 mm ( H x W x D )

**Approvals/qualification:**



RoHS

EN50131-2-2 Grade 2

**Events Detection:**

HighBar™ false alarm rejection processor

**RF Immunity:**

20 V/m, 10-1000 MHz;

10 V/m, 1-2 GHz

**White Light Immunity:**

6500 lux

**Sensitivity:**

Selectable: 2-event or 3-event

**Operating Temperature**

**Range:**

-10°C to +55°C

**Accessories:**

**Mounting bracket:**

P/N: KSI5900000.300

Limitations of Security Products: Security products and alarm systems do not offer guaranteed protection against burglary, fire, or other emergencies. They may fail to warn for diverse reasons, including (but not limited to): power failure, dead batteries, improper installation, coverage "blind spots", coverage areas overlooked during installation, defeat by technically sophisticated intruders, component failure, or inadequate maintenance. Alarm systems should be checked weekly to ensure that all devices are working properly. AN ALARM SYSTEM IS NOT A SUBSTITUTE FOR INSURANCE.

Note: specifications are subject to change without notice

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# PI-PIR Motion Detector UNUM

## Installation Instructions

### 1: Mounting Location

#### A. Wall mounting:

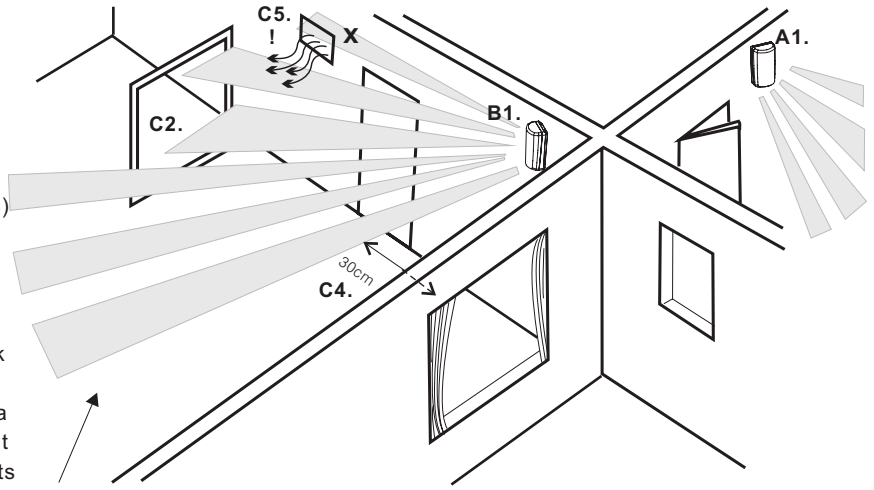
1. Sensor base fastened flat on vertical wall ( $\pm 2$  degrees)

#### B. Bracket mounting:

1. Bracket fastened to semi-vertical surface ( $\pm 15$  degrees)
2. Sensor on bracket in vertical position ( $\pm 2$  degrees)

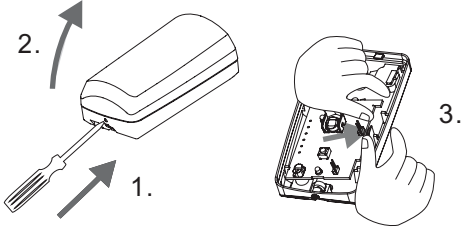
#### C. All mounting:

1. Height = 2.3 m or 3m above floor of monitored area
2. Clear line-of-sight from sensor to monitored area  
Note: glass will block PIR sensor's view; metal will block microwave sensor's view
3. Wall temperature similar to walls/floor of monitored area
4. Sensor aimed away from windows and reflected sunlight
5. Sensor aimed away from heaters or heater/cooler outlets
6. Sensor aimed so that likely intruder paths cross three views



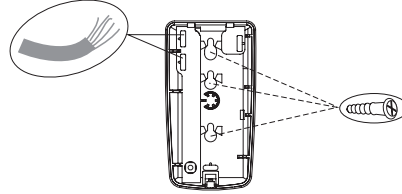
### 2: Sensor Disassembly

In slot at sensor bottom, use screwdriver or thumbnail to push inward (1.) on cover latch. (2.) Remove cover. (3.) Push outward on PC board latch at sensor base right side. Using PC board as handle, gently lift PC board right side and remove.



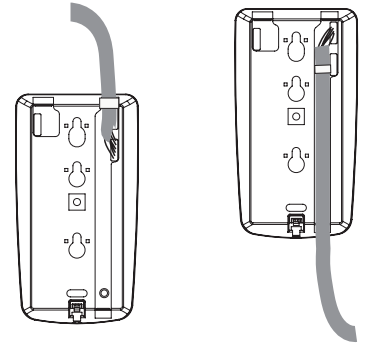
### 3: Base Hole Preparation

Identify necessary holes on diagram;  
1. For wall mounting, knock out hole covers.  
2. For corner or 45 degree wall mounting, use drill to open at least two holes at base side depressions.  
3. For bracket mounting, use drill to open a 3 mm hole in the center of the square recess at the rear of the base. See 5 for more.  
If cable ties will be added for wire strain relief, select holes needed, then clear out thin plastic material covering those holes.



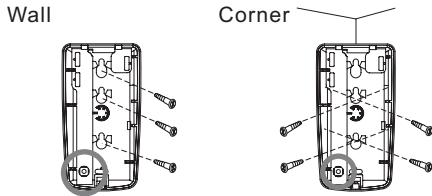
### 4: Cable Preparation

Remove 8 cm of cable jacket. Pass the cable wires through the selected hole. Lay cable in wire channel. Secure cable with cable tie.

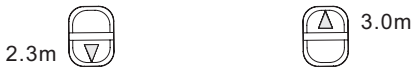


### 5: Wall/Corner Mounting

Use screws to mount on wall or in corner.



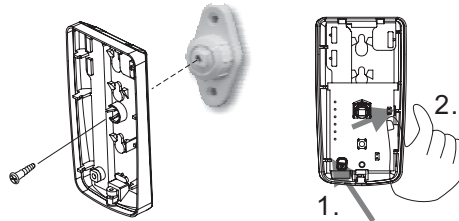
Set PC board alignment post in position "0" or "1" to select mounting height.



Alignment Post position "0" Use with: Wide-angle lens.  
Alignment Post position "1" Use with: Wide-angle lens

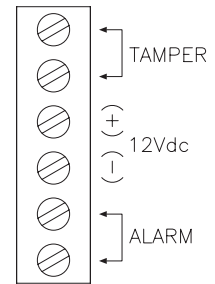
### 6: Bracket Mounting/PC Board Installation

**Bracket:** Use screws to mount bracket in desired place, use tool to open a 3 mm hole in the center of square recess at the rear of the base. Use screw to mount sensor base onto bracket. Refer to 5 for setting circuit board alignment post.  
**PC Board:** To replace PC board, (1.) place PC board left edge into two left-hand mounting slots in sensor base. (2.) On right-hand side, gently press PC board into place until latch snaps over PC board.



### 7: Wiring

Cut cable wires to appropriate length and connect wires to sensor terminal block.



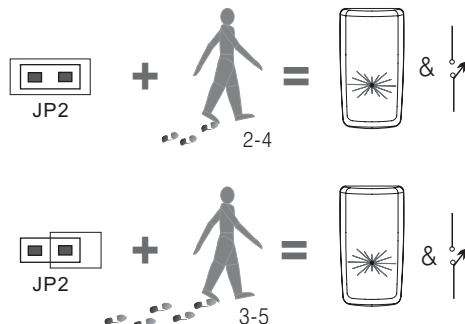
### 8: Operation Programming

Set JP and JP2 according to need. If there is a way for intruders to pass only a very short distance in the sensor's view, or if aggressive detection is required, then use high sensitivity. Otherwise, standard sensitivity is fine for ordinary applications. Factory-set jumper positions are shown below in gray. Pulse counts: High=2; Standard=3.

PI-PIR Motion Detector UNUM			
FUNCTION	JP	ON	OFF
Sensitivity	2	STANDARD	HIGH
Alarm LED		LED	<del>LED</del>

### 9: Motion Distance Sensitivity

With standard sensitivity, detection occurs in 3 to 5 steps. With high sensitivity, detection occurs in 2 to 4 steps.



### 10: LED Indicator Operation

The chart below shows possible LED indications.

PI-PIR Motion Detector UNUM	
Sensor State	LED Display
Warm-up	OFF
Alarm	ON 3-6 Seconds (IF LED ENABLED)
Normal	OFF