

# ***Acu-Park™***

user's guide



## limited one year warranty

Directed Electronics, Inc. (hereinafter "Directed") promises to the original purchaser that this Acu-Park™ unit (Unit) will be free from defective in materials or workmanship under normal use for a period of one year from the date of first purchase as indicated by the purchase receipt. During this one year period, Directed will at its option, and at no charge to you, repair or replace this Unit if it is defective in workmanship or material **PROVIDED** the Unit is returned to Directed's warranty department at One Viper Way, Vista, CA 92081, along with a \$30 postage and handling fee, with a bill of sale or other dated proof of purchase bearing the following information: Consumer's name, telephone number and address, place of purchase and product description. This warranty does not cover labor costs for the removal or reinstallation of the Unit. This warranty is non-transferable and does not apply to any Unit that has been modified or used in a manner contrary to its intended purpose, and this warranty does not cover damage to any Unit caused by installation or removal of the Unit. This warranty is void if the product has been damaged by accident or unreasonable use, neglect, improper service or other causes not arising out of defects in materials or construction.

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## introduction

### **No more guess or hesitation to park your car!**

The Acu-Park™ is an accurate parking aid for your garage. The Acu-Park™ employs the latest ultrasonic and microcomputer technology in detecting your vehicle distance from the garage wall. By utilizing a traffic signal light and selectable sound you can easily park your car to a designated spot in your garage.

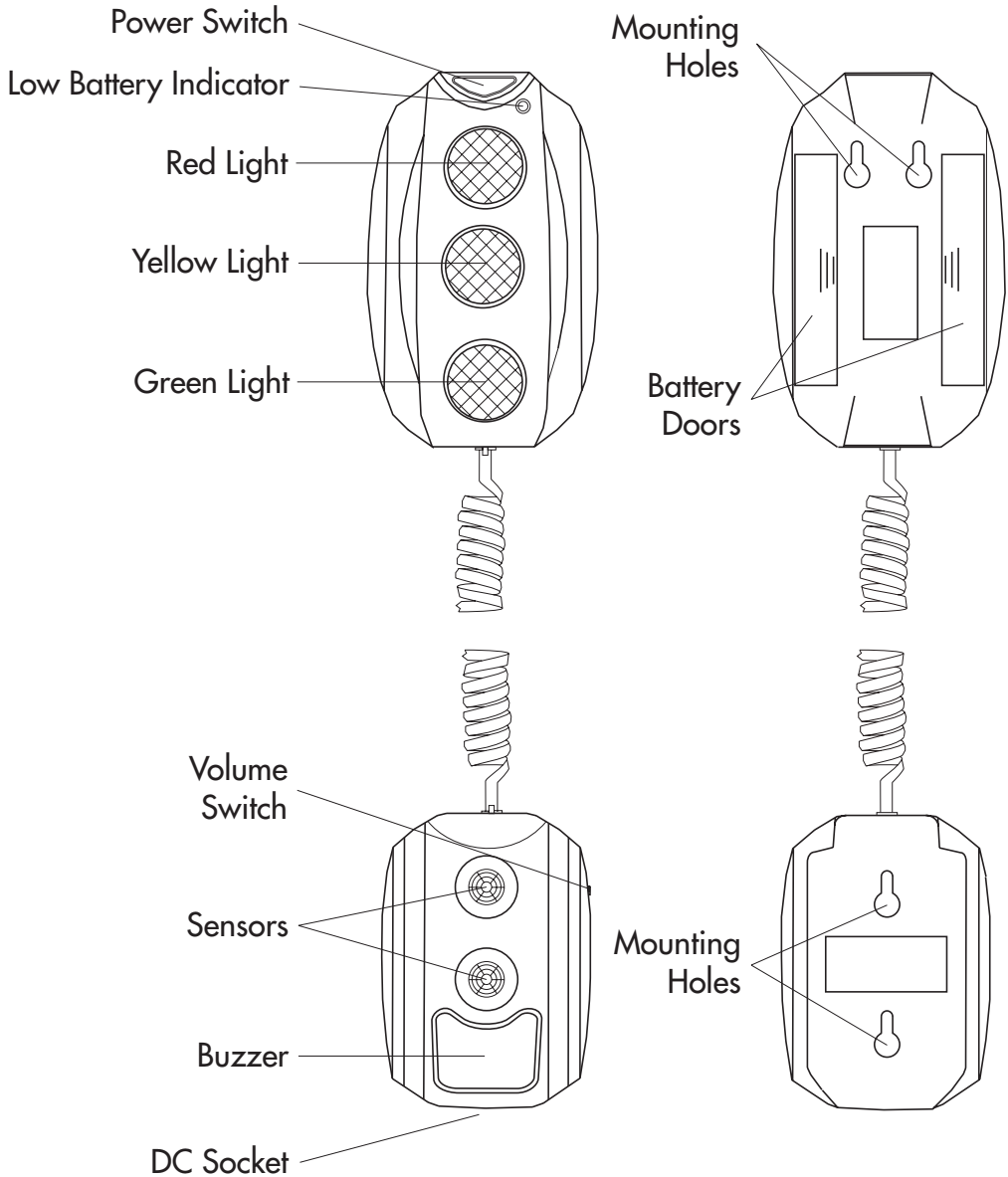
The Acu-Park™ is operated with 4 AA size batteries (not included) or by means of an AC/DC adapter.

This product is not designed to be immune from the effects of electrostatic discharge, strong magnetic radiation or other electrical disturbances since malfunctions under such conditions are non-critical. The power switch on the unit allow the AcuPark™ to be easily reset to normal operation.

## fcc/id notice

This device complies with Part 15 of FCC rules. 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 undesirable operation.

# description



# installation

The following paragraphs give details on the Acu-Park™ installation procedure.

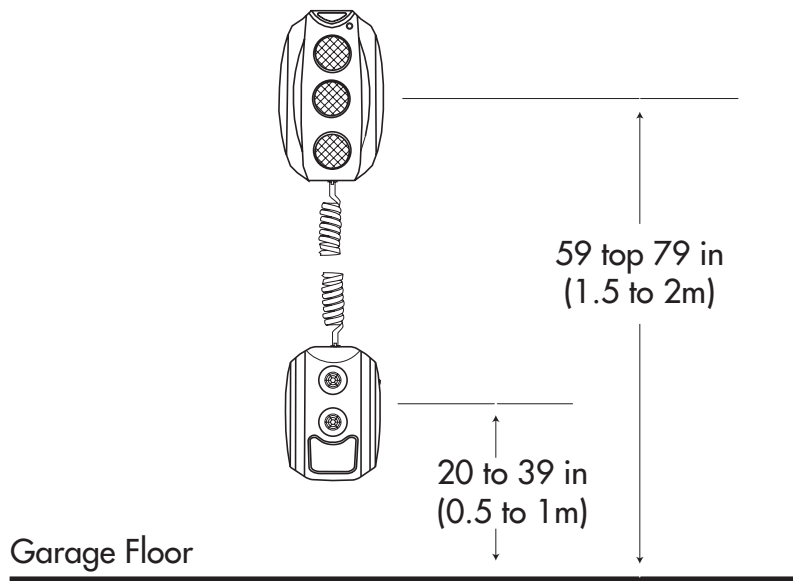
## Step 1. Installation of Battery—AC/DC Adapter

Locate and remove the two battery doors at the back of the main unit. Install 4 AA alkaline (recommended) batteries in the proper polarity as indicated in the battery compartments. To use the AC/DC adapter plug the DC plug into the bottom of the sensor unit and then the adapter into a wall convenience outlet (110VAC).

*NOTE: Make sure that the area around the sensor head is clear of any objects which would cause false sensing.*

## Step 2. Mounting the main and sensor units

With someone sitting in the driver's seat, ask them to tell you the appropriate height at which to mount the main unit of the Acu-Park™. With the vehicle in the garage position the sensor unit at a position where it directly faces the bumper of the vehicle. The illustration below gives approximate installation heights for the Acu-Park™.



Positioning Accu-Park

Once the correct heights are determined for both the main and sensor unit, the template located at the back of this guide can be used to aid in placing mounting screws or nails.

### **Step 3. Power Up—Auto-Calibration**

Park your car at the desired position in front of the Acu-Park™. Make sure there are no obstacles between the bumper of your vehicle and the Acu-Park™. The reliable operating range of the Acu-Park™ is between 8 inches (20cm) and 15 feet (4.5m).

*NOTE: Make sure that there are NO moving objects between the sensor unit and the vehicle during the calibration process.*

Press the power on button on the main unit. The RED light will flash and the auto-calibration routine will commence. When the auto-calibration routine is completed all three lights (GREEN, YELLOW, and RED) will flash once. The auto-calibration takes about 10-seconds to complete.

The installation is now complete and the Acu-Park™ is in its power saving standby mode. If there is movement of the vehicle the Acu-Park™ will wake up and operate.

## **technical information**

### **Modes of Operation**

There are three modes of operation for the Acu-Park™, these are:

Standby Mode  
Enter Mode  
Exit Mode

#### **Standby Mode**

After power up and auto-calibration of the Acu-Park™ or no change of position within range of the sensor unit for 1-second, the Acu-Park™ will enter energy saving standby mode. The Acu-Park™ checks every second to see if there is any positional change of the vehicle. If there is a change the Acu-Park™ wakes up in either Enter Mode or Exit Mode depending on the direction of the vehicle relative to the sensor unit.

#### **Enter Mode**

When an object (it is not necessary to use a vehicle) is entering into the sensing range of the sensor unit (such as driving your vehicle into the garage), the Acu-Park™ wakes up and is in enter mode. The lights will sequence from GREEN to YELLOW and then to RED. The RED light indicates the stop position for the vehicle. The Acu-Park™ will sound if the sound-switch is in the Hi or Lo position.

## Exit Mode

When an object is moving away from the Acu-Park™ (such as driving your vehicle out of the garage) the Acu-Park™ wakes up and displays the YELLOW light and then the GREEN light. No sound will be generated.

## Smart Hysteresis Algorithm

The Acu-Park™ employs the use of a hysteresis algorithm to prevent two lights to indicate simultaneously when the vehicle is just passing the a critical point of distance determination. For example, when exiting or entering the point where the distance indicator light changes (for example, RED to YELLOW or YELLOW to RED—only one light will indicate).

## troubleshooting

No response to the movement of the vehicle.

1. Verify if the power button is in the ON position.
2. Verify if the batteries are properly installed or are discharged.
3. Verify the Low Battery indicator light on the main unit.
4. If the AC/DC adapter is being used, ensure it is connected to the sensor unit and plugged into a convenience outlet.

Wrong indication of light(s) during parking

1. Check for and remove any object from in front of the sensor unit.
2. Sensor unit is positioned incorrectly. Ensure that the sensor unit is facing the car bumper or license plate, and that the sensor unit is parallel and flush to the wall.

## maintenance

Change the batteries in the main unit when the Low Battery indicator is on. If the unit is not to be used for a long period of time, remove the batteries from the main unit.



## specifications

Dimensions	Main unit – 6-7/8 in. x 4 in. x 1-1/4 in. (174mm x 104mm x 34mm)
	Sensor unit – 4-3/4 in. x 3-3/8 in. x 1-1/4 in. (120mm x 82mm x 32mm)
Power Consumption data	Standby mode: 300uA
	Operating mode: 30mA (light only) 100mA (with buzzer)
Power	4 x AA alkaline batteries Optional AC/DC adapter
Battery Life	Approximately 6-months (2 parking cycles/day)*
Audio Output Power	93dB (Hi) 83dB (Lo) 0dB (Off)
Dectection Range (Default values)** Range varies with auto-calibration	Green Light – <i>15 ft (4.5m)</i> to 5 ft (1.5m) from Sensor unit
	Yellow Light – <i>5 ft (1.5m)</i> to 8 in. (20cm) from Sensor unit
	Red Light – <i>8 in. (20cm)</i> to 5 ft (1.5m) from Sensor unit
Sensor operating frequency	Ultrasonic transmitter and receiver operating at 40kHz

\* Battery life varies with the brand and model of batteries along with other operating conditions.

\*\* The default values are shown in *Italics*. These values are loaded into the system if there is an object placed in front of the sensor unit less than 8 inches (20cm) or greater than 5 feet (1.5m) during power up auto-calibration.

The company behind this system is Directed Electronics, Inc.

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