# ParkAlert Front Sensor System with Buzzer or Display

## Manual

**ECHOMASTER PRO**

**PS-FBP/PS-FDIS**
ParkAlert Front Sensor System
with Buzzer or Display

# Introduction

**Congratulations on purchasing EchoMaster PRO parking sensors. This ultrasonic detection system is designed to assist in the avoidance of obstacles while parking.**

**Disclaimer:**
EchoMaster® is strictly a driver assistance device, and should not be relied upon as a substitute for safe driving practices. Use common sense when parking and always follow recommended safe driving guidelines from your local, State and County Department of Motor Vehicles regarding parking procedures. To help prevent accidents, always use caution when parking, looking visually to ensure your path is clear. Keep speeds under three miles per hour. The owner shall not be entitled to recover from the Company, its successors or assignees, incidental and consequential damages, such as personal injury, loss of income, loss of time, loss of profits, loss of vehicle use or property damage. No employee, agent or representative of the Company of the Selling Retailer may modify, alter or extend this Warranty in any way. This Warranty gives you specific legal rights. You may also have other rights under this Warranty which may vary from state to state.

Note: Under no circumstances should you attempt to open the control box or any other component. Doing so will void all manufacturer's warranties.

**This manual covers products:**

| | |
|---|---|
| **PS-FBP-B** | (ParkAlert Front Sensor System with Buzzer - Gloss Black sensors) |
| **PS-FBP-M** | (ParkAlert Front Sensor System with Buzzer - Matte Black sensors) |
| **PS-FBP-S** | (ParkAlert Front Sensor System with Buzzer - Silver sensors) |
| **PS-FBP-W** | (ParkAlert Front Sensor System with Buzzer - White sensors) |
| **PS-FDIS-B** | (ParkAlert Front Sensor System with Display - Gloss Black sensors) |
| **PS-FDIS-M** | (ParkAlert Front Sensor System with Display - Matte Black sensors) |
| **PS-FDIS-S** | (ParkAlert Front Sensor System with Display - Silver sensors) |
| **PS-FDIS-W** | (ParkAlert Front Sensor System with Display - White sensors) |

# Box Contents

- 4 Bumper Mount Sensors with 18" Pigtail
- 4 Black Rubber Seals
- 4 6° Sensor Sleeves
- 4 12° Sensor Sleeves
- Control Module
- Speaker with Volume Control
- Power Harness
- 22.5mm Hole Saw
- Accessory Pack
- Measuring Tape
- User Manual
- Warranty Card

# Key Features

- Triangulation technology
- 2 or 4 sensor installation
- Low profile, paintable sensors
- Wide detection angle with minimal blind area
- OE sounding tone
- Self-diagnostic mode at startup
- Compatible with optional display (P/N: PA-DISPLAY)

# Fitting Instructions

## Recommended Tools for Installation

- High torque drill, use slow speed (approx 400 rpm)
- Grease Pencil and Center Punch for marking drill point
- 1/8" carbide tipped drill bit for starting pilot hole
- Hole Saw 22.5mm (Included)
- Pliers, Crimpers & Soldering Iron
- Multi-Meter
- Zinc Galvanizer or a rust inhibitor for metal (OPT P/N: EMZ)
- Safety goggles
- Angle Gauge Sleeve Selector (OPT P/N: SP1022)
- Measuring Tape

## Optional Tools

- Panel tool (for situations requiring plastic, inner panels to be removed)
- Phillips head tip for drill
- Wire pulling tool (for routing wires)/ Fishing tool
- Semi-circular metal file (for smoothing hole edges when necessary)- DO NOT use fingers to test holes for burrs or smoothness. EDGES ARE SHARP!!!

## Determining Sensor Position: Measure Twice, Cut Once!

Inspect behind the bumper in the approximate mounting area to check for any possible obstructions.

**A proper installation will take into consideration two factors:**

**(1) Placement:** height and distance either side of bumper center.
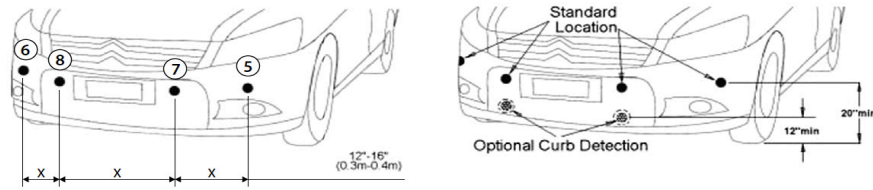**(2) Angle:** accurate detection depends on the correct sensor angle.

The sensors need a 1" clearance space behind the bumper to be completely inserted. Some bumpers have an outside cover or fascia and a metal backing. You may have to drill through both layers to ensure you have enough clearance in order to fit the sensors. Other bumpers require some removal of foam backing.

CAUTION: Be careful of hot engine parts and/or sharp edges under bumper.

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# Fitting Instructions - (continued)

# Fitting Instructions - (continued)



Sensor Install: Sensors must be installed from left to right (in this order: 6-8-7-5) with control module harness entering vehicle near sensor #5. If only using 2 sensors for the install, it is recommended to use sensors 7 and 8.

## Choosing the Correct Angle Sleeve (Optional angle gauge: SP1022)

Vehicle is parked on flat and level ground and the parking brake is set. Place the Angle Gauge flat against the surface of the bumper. The swingarm will point to the correct measurement. **DO NOT CONTINUE TO NEXT STEP IF ARM FALLS BEYOND THE LAST LINE ON THE MARKER!** This means that the placement is too steep; re-evaluate placement and find a better area.
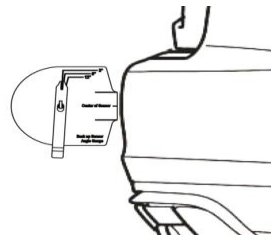


## Drilling Holes and Installing Sensors

**Warnings / Precautions:** Please consult with us before installing on a vehicle with any rear or front mounted external appliances, like spare tires, bike racks, brush guards, etc, which may interfere with the system's detection and cause false detection.

### (1) The Sensor Holes

Using the provided Hole Saw, cut the sensor holes. Always wear approved safety glasses when drilling and use caution. If drilling a metal bumper, coat edges of holes with Zinc Galvanizer, a rust inhibitor.

### (2) Mount Sensor

Ensure correct angle sleeve is being used. Insert sensor with the "up" marking facing up.
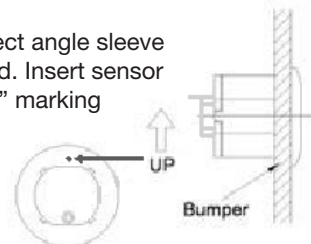


## Connecting the Power Harness

The control module gets power from the ignition circuit. To find ignition, start by locating the ignition harness in the dash area, usually by the steering column. Using a test meter, find the wire that is 12 volts when the key is turned to the run position and during start.
This system is fully automatic. It is on when the vehicle ignition is on. It is active when the speed is below 6 mph. It is in standby mode when above 10 mph.
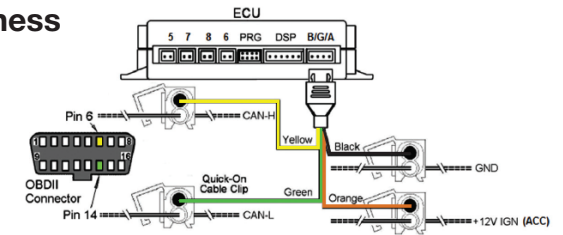


To detect speed you need to connect to the CAN-H (Pin 6) and CAN-L (Pin 14) on the OBDII connector

*NOTE: It is recommended to solder all connections.*

## Running Sensors to Control Module

Many vehicles will have factory grommets to allow routing of wires from the outside to the inside of the vehicle. If you are drilling a hole through a metal body panel to route your sensor wires into the passenger compartment, determine where the sensor wires will enter into the passenger compartment and route to control module.

## Mounting Speaker

The speaker has 3 adjustment positions: Hi, Low, and Off. You usually want to keep the speaker on the same side of the vehicle as the control module for ease. Clean the mounting area with the supplied alcohol pad, affix adhesive to the back of the speaker, and firmly press the speaker into place. Route speaker cable to control module and plug into power harness.

If using Display, please refer to PA-DISPLAY user manual for mounting instructions.

## Mounting Control Module

You will want to mount the control module in the passenger compartment, in/under/behind the dashboard. Clean a suitable location using the provided alcohol swab. Plug in all the wires, adjust dip switches, then peel backing of Velcro liner to mount. Finish by securing any loose and/or excess wiring. Before reassembling any panels that might have been removed from the vehicle, test the system.
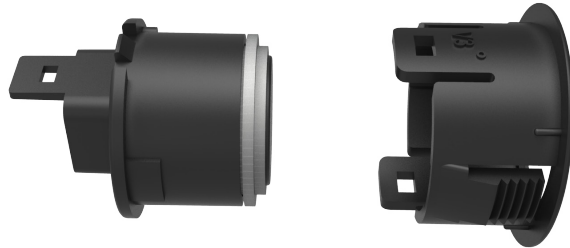
## Sensor Assembly

### Step 1
To take the sleeve off of the sensors lift up on 1 clip and push the sensor out with your thumb.

### Step 2
Slide the sensor angle sleeves onto the sensors. The embossed angle measurement should be on the same side as the clip.

### Step 3
Ensure that the arrow molded into the back of the sensor points to the line on the angle sleeve.
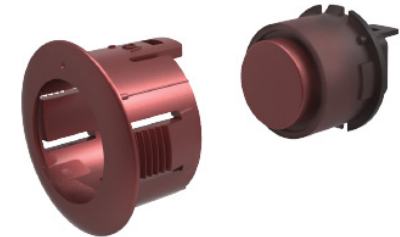
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## Sensor Painting

### Step 1
Remove the silicon gasket and disconnect cable before painting the sensors.
Certain colors may require a thin coat of primer.

### Step 2
Paint the front of the sensors and the angle sleeve. Avoid getting excessive paint on the back of the sensors. Paint thickness should not exceed 1mm or sensors may not function properly.
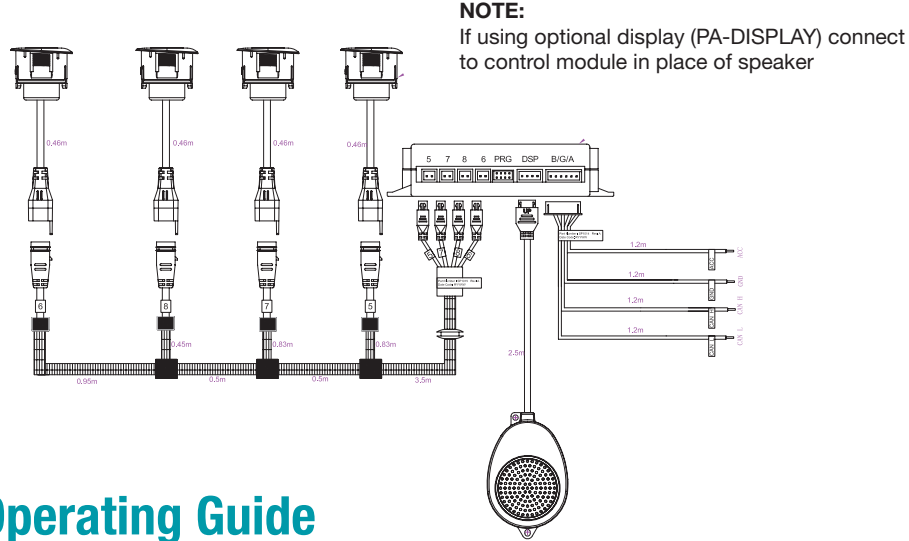
Note: Gasket is only removable on paintable sensors.

### Step 3
After the paint has fully dried, reassemble the sensors as shown below.

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# Wiring Diagram

**NOTE:**
If using optional display (PA-DISPLAY) connect
to control module in place of speaker



# Dimensions (mm/in)



# Operating Guide

This system is fully automatic.  It is on when the vehicle ignition is on.  It is active when the speed is below 6 mph and is in standby mode when above 10 mph.  The system should beep one time when powered on to notify the driver that it is on and working.

Once an object is detected within the range, the system will alert the driver via audible tone.  The system will stop beeping after ~2 seconds if there is no additional movement detected.  The detection range and audible alerts are as follows:

| Distance | Visual Awareness | Display/Alarm Sound |
|---|---|---|
| <12"/ <0.3m | Danger | -P- (STOP)/Beep (Biiiiiiiiiiiiiiiii) |
| 12" – 16"/ 0.3-0.4m | Danger | Inches/Bi. Bi |
| 16" – 20"/ 0.4-0.5m | Caution | Inches/Bi.. Bi |
| 20" – 24"/ 0.5-0.6m | Caution | Inches/Bi… Bi |
| 24" – 28" / 0.6-0.7m | Caution | Inches/Bi…. Bi |
| 28" – 32" / 0.7-0.8m | Safety | Inches/Bi….. Bi |
| >32" / >0.8m | Outside | Inches (up to 98")/None |

**NOTE** -Performance may be affected by the following: Heavy rain, loose gravel/bumpy road, steep slopes, flat/smooth surfaces. Keep sensor surface free of snow, ice, mud, etc.

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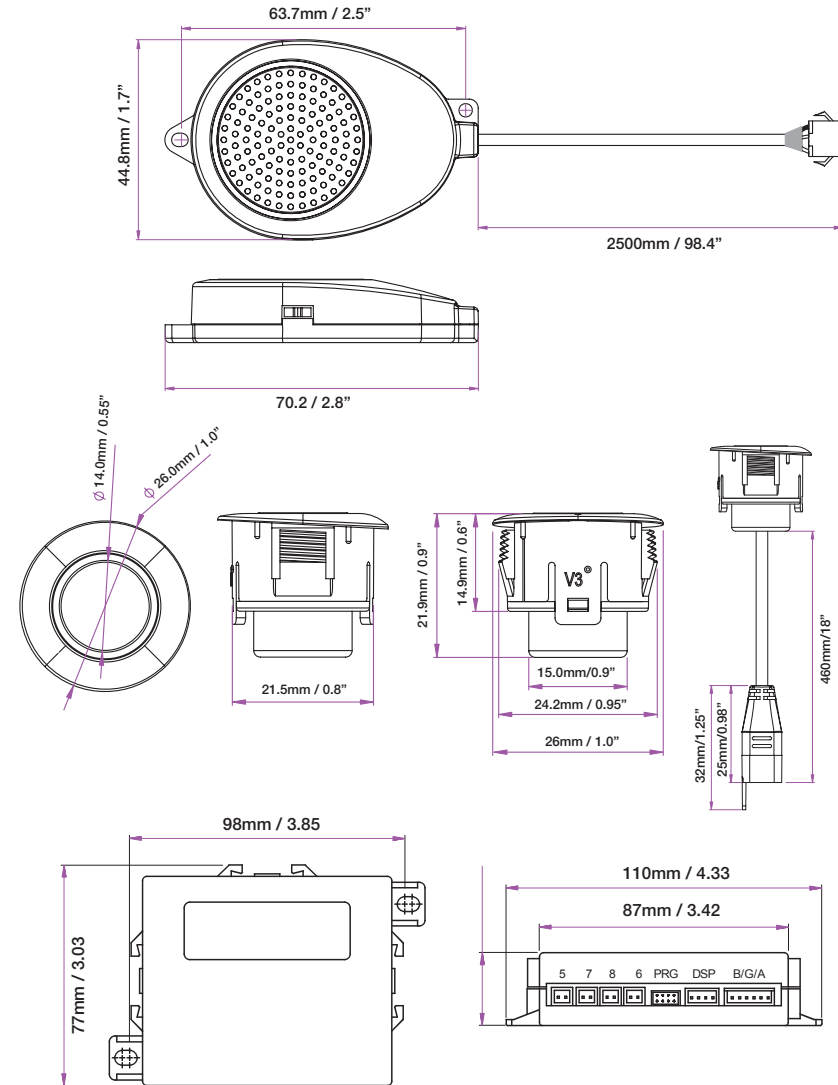
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## Troubleshooting

| PROBLEM | REASON | SOLUTION |
|---|---|---|
| **System doesnt react when reverse is engaged** | System is not powered up or wrong connection of power cable | Check the power and ground connections |
| | Invalid connection between speaker/display and control module | Check the connection between speaker/display and control module |
| **After activation, system continuously beeps for 3 seconds** | Invalid connection between sensors and control module | Check the connection between sensors and control module |
| | All sensors are defective | Replace the defective sensors |
| **False alarms** | Sensors pointing down | Change angle sleeve |
| | Sensors rotated | Note 'UP' marking on sensor and adjust accordingly |

## Specifications

| PS-FBP-B/M/W/S   -   PS-FDIS-B/M/W/S | |
|---|---|
| **Operating Voltage Range** | 10.5 - 16V DC |
| **Rated Voltage** | 12V DC |
| **Rated Current** | 400mA |
| **Operating Temperature** | -20C - +70C |
| **Waterproof Grade (Sensors & Module)** | IP67 - ECU: IP40 |
| **Detection Range** | 0-1.6m; 0-5.2ft |
| **Harness Length** | 8 feet |
| **Hole Saw** | 22.5mm |
| **Angle Sleeves** | 6 degrees and 12 degrees |

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