

\*Parking Dynamics PD1 Parking Sensor is strictly a driving assistance product and should not be used to substitute safe driving practices.

Find more Installation & Technical PDF guides at:

[ParkingDynamics.co.uk/Installation](http://ParkingDynamics.co.uk/Installation) & [ParkingDynamics.co.uk/Technical](http://ParkingDynamics.co.uk/Technical)

\*If you have a tow bar fitted, spare wheel fixed to rear door or the antenna will be fitted within 3cm of the metal crash protection bar download the PDF 'Boosting PD1 Sensor Detection Range'.

## MOUNTING INSTRUCTIONS

### 1. WHAT IS THE PD1 SENSOR & HOW DOES IT WORK?

Parking Dynamics PD1 Vision is a parking sensor device that uses patent protected, low energy electromagnetic wave technology and is able to detect all objects within a set proximity of your vehicle. A unique design ensures No Holes need to be drilled in your bumper making the PD1 totally invisible when fitted!

Once activated by selecting reverse gear the PD1 generates a shielded area around the rear bumper (Fig.2) allowing you to park and reverse in total safety with complete confidence.

When an obstacle enters the zone of protection, a series of acoustic signals are given to alert the driver as to its proximity.

**A) Upon selecting reverse gear** a diagnostic check of the entire system is completed. If the electronic control unit (ECU) is fully operational, a signal (one single tone) is emitted and the red logo (car image) on the display lights up to confirm this.

**B) During the approach to an obstacle** the ECU activates the LED display together with acoustic signalling starting from a distance between bumper and obstacle (measured in the central zone of the bumper) of around 60-70 cm, with 1 colour display lit with an increased sequence of lights all the way up to 7 and a simultaneous beeping as you get closer.

**1) The first Two Green Displays** inform the driver that an obstacle is approaching (alert signal).

**2) Three Yellow Displays** light up when the obstacle is within proximity of the bumper at a variable distance (15 to 30 cm) according to the type of obstacle. These values correspond to the central zone of the bumper while on the side edges the distance is slightly less.

**3) The Two Red Displays** will light up when an obstacle is very close to the bumper (15-10 cm) in order to alert you of possible contact.

### 2. TECHNICAL SPECIFICATION

- Operation voltage from 10.5 to 18 V
- Average current absorbed: 50 ma
- Temperature of operation from - 20 to +90 °C
- Average distance of sensor activation: 60 cm

### 3. MOUNTING THE ELECTRONIC CONTROL UNIT (ECU)

**a)** Ensure you have access to route the black twin aerial wire from the boot / trunk to the antenna, which will be located on the inside of the bumper. Look for any grommets or holes provided by the car manufacturer for the routing of this wire. If no hole is present, simply drill a small hole and use a grommet to protect the wire casing.

**b)** Secure the electronic control unit using the adhesive material included (using pressure to ensure a secure fit), inside of the boot / trunk of the vehicle, close to the reverse light cluster but leaving a gap of at least 2 cm to ensure no interference with the existing electrical components.

### 4. ANTENNA MOUNTING NOTES

The adhesive aluminium antenna sensor must be installed on the inner side of the bumper and it is **of high importance** that the antenna is installed on **highest part from the ground** and on the greatest protrusion of the bumper from the car body. 40cm to 60cm from the ground with 50cm being optimum.

*The ECU must be mounted inside of the boot / trunk of the vehicle and the antenna sensor on the inside surface of the bumper following the procedure of the points 4a and 4b.*

**Note:** The system is only able to work optimally when the antenna sensor is run the full length of the bumper leaving a gap of at least 3 cm from the metal structure of the vehicle especially the metal crash protection bar found behind the bumper. But it can run close to a metal structure for a short length of 2/3 cm

### MOUNTING THE ANTENNA

#### Pre-test:

Once you have measured and determined your desired heights for the 1 or 2 antennas, and before fixing the bumper back on permanently. Position the bumper back on your car using only the clips to hold it, and test with your hand to ensure you are satisfied with the detection range. Move antennas if required. Only use 2 antennas if required, see **Boosting Detection Range** notes

\*When doing a Pre-Test only approach the vehicle once and then reset the system by disengaging reverse gear or false alerts from the system can be given during this test.

**a)** Remove the bumper and carefully clean the inner side surface using alcohol or other solvent (but NOT anti-adhesive detergent), where the antenna will be positioned.

**b)** Place the antenna connector so that it will be situated at the side of the bumper where the ECU is positioned. Also ensure that once the bumper is re-fitted there is a route for the twin wire into the vehicle.

Run the antenna over the full length of the bumper onto the sides leaving a gap of 20cm from the wheels. Use strong pressure to secure the antenna appropriately and cut off any excess. If you accidentally break the antenna tape, you will find a replacement at [parkingdynamics.co.uk](http://parkingdynamics.co.uk)

**c)** For maximum adhesion and optimum protection apply a piece of the included black adhesive material at either end of the antenna. Its recommended (but not essential) to cover the antenna with a black anti-rust protection paint that is applied to the underneath of a car chassis to protect from the elements or use a similar plastic protection primer.

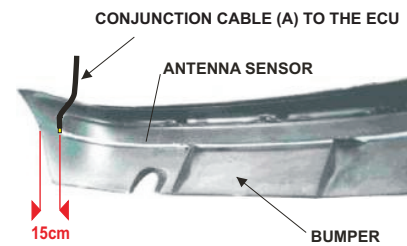


Fig.1 Antenna assembled on bumper

### 5. ELECTRICAL CONNECTIONS

#### 5.1 Connecting the Electronic Control Unit (ECU).

**a)** Connect the twin wire antenna connector to the ECU and route this wire out of the vehicle using an original rubber grommet on the car body or through the hole you have made for ease of access. \*Do NOT run the twin antenna wire through the Air Valve if present near your bumper.

**b)** Insert the connector that houses the power, earth and speaker connector.

**c) Twin Black Antenna Wire:** Twist the 2 wires together and crimp on the supplied male connector. Now connect to the female connector on the antenna positioned on the bumper. This twin antenna wire can be extended up to 20cm if required.

**Note:** This twin antenna wire must be fastened securely to the antenna using the included connector. Fix the twin wire securely when routing from ECU to antenna, using as much mastic as you need to avoid any movement or oscillation. This will prevent false alarms.

## 5.2 Electrical Connections

- a) **Red Wire (12V when reverse is engaged):** Connect to reverse light wire.
- b) **Black wire:** Connect to Earth picked up from the body of the vehicle. Typically a small bolt can be found close to the light cluster at rear of vehicle, attach earth wire here or to earth wire.

**Note:** This twin wire to the antenna must be as short as possible and must be fastened very carefully to the antenna, using as much mastic as you need to avoid any movement or oscillation that could cause false alarms. The twin wire shouldn't touch the car body or move about when in motion.

## 6. MOUNTING OF THE WAVE BAND DISPLAY

Pass the twin cable and the black single cable (5 m long) from the rear of the vehicle to the front under the carpet and door rubber/plastic trim. Following the original cars wiring route.

Position the PD1-Vision display on top of the rear view mirror using the self adhesive strip that's already applied to the display and trim any excess wiring. Complete the cabling connections as shown in (Fig. 3) Connect the single black wire to the copper shield, black wire to the white wire and black-white wire to the red wire from the display

## 7. FINAL SET-UP & TEST PROCEDURE

Switch on the ignition and select reverse gear.

a) **Upon selecting reverse gear** a diagnostic check of the entire system is completed. If the control unit is fully operational, a signal is emitted (one single tone) and the red logo (car image) on the display lights up to confirm this. Once the signal is obtained the system is operational.

**ATTENTION:** If the speaker doesn't give this or any other signal check all connections especially check that the chosen earth (black wire) is secure.

b) Starting from about 1 meter away from the centre of the bumper, walk slowly to simulate the forward motion of the car.

At a distance of around 60/70 cm the first green display will light and emit the first acoustic signal. The second green display will light when distance decreases and this will then change to the first yellow display at around 20-30 centimetres with a continuous increase of the repetition rate of the acoustic alert signal.

Next in the sequence are two red lights (indicating risk of imminent contact) and this will display when there is only a few centimetres between object and bumper and obstacle meeting thus alerting you with a more frequent beep.



**Note: The Parking Dynamics PD1 – Vision** alerts you to obstacles that are approaching with more frequent beeps. The alert is only given by moving towards and approaching obstacles and not fixed or stationary obstacles.

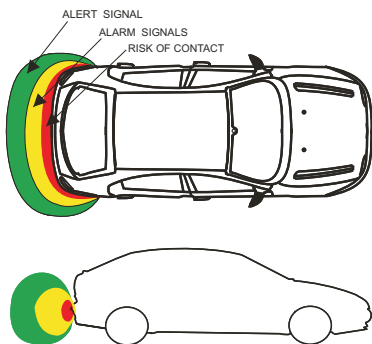


Fig. 2 Protection area

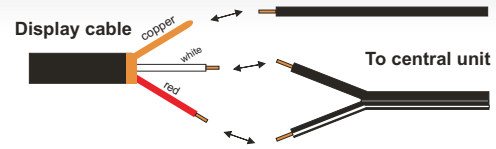


Fig. 3 Electronic Control Unit (ECU) Connections

**ATTENTION:** If the acoustic speaker gives a continuous repetitive BEEP when reverse is selected it means that the antenna connection is missing or not securely attached or the display connections are wrong.



Fig. 4 Display mounted on rear view mirror

## WARNINGS

- 1) As soon as the system is activated the surrounding area of the bumper (antenna sensor) is monitored.
- 2) **It is very important** during the set-up and testing, not to switch on the system while you are very close to the central unit and antenna sensor as this could result in false information on the working dynamics of the system.
- 3) Due to the operating principle of the Parking Dynamics PD1 Rear sensor and depending on the mounting position of the antenna sensor, the unit can at times give alert signals in error as the vehicle reverses. This is due to detection of the road surface and is **completely normal**.
- 4) Operation in Heavy Rain conditions: \*When heavy rain is present the PD1 parking sensor system automatically reduces its sensitivity in order to eliminate false alarms that can be given by the movement of water on the bumper. False signals in heavy rain conditions are highly affected by specific designs of vehicles and their bumpers. Some bumper designs have a higher chance of false alarms in heavy rain conditions.

False signals are given as a result of water flowing between the car body and the bumper. Parking Dynamics have reduced this as much as possible with good results within the PD1 software for optimum usage.

This is intelligent in itself and \*surpasses ultrasonic's\* in such scenarios ensuring a safe and secure parking and reversing manoeuvre.

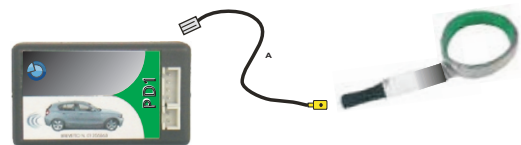


Fig. 5 Electronic control unit, antenna connecting cable and antenna

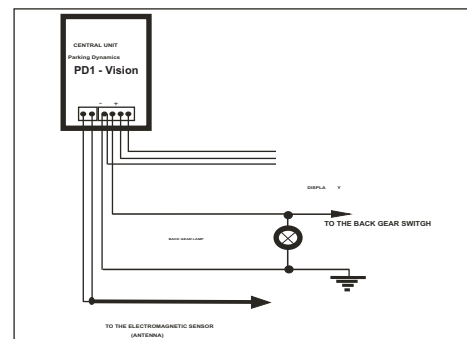


Fig. 6 Electric schematic of connections