

INSTALLATION INSTRUCTIONS & USER MANUAL

Rear parking sensor mod. **EPS-DUAL 3.0 with DISPLAY WIRELESS**

EPS-DUAL 3.0 can be installed only on rear bumper.



The system is strictly a driver assistance device and should not be relied upon as a security device or a substitute for safe driving practices.
Use common sense when reversing and always follow recommended safe driving guidelines.

1

a) The installation of the antenna sensor, constituted by an aluminium adhesive ribbon, must be applied to the inner surface of the bumper. It is **of some importance** that the zone of application corresponds to the **higher part** as regards the ground but also the **most distant** from the car body. It is not advisable to install the antenna sensor too low.

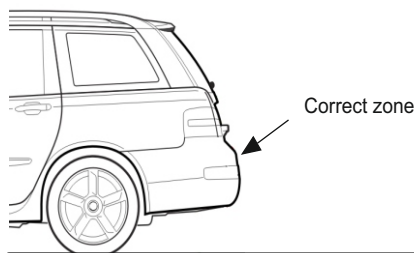


Fig. 1

b) Disassemble the bumper.

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STARTING PROCEDURE

a) Identify on the car body the zone close to the extremity of the bumper and, on the side where it is present the back-gear lamp, a possible hole of passage toward the intern of the trunk in order to carry on the data cable from the antenna sensor.

b) Through the individuated passage route the data cable inside the trunk leaving the fast-on terminal outside. (Fig. 2)



Fig. 2

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POSITIONING OF DATA CABLE AND ANTENNA SENSOR

Thoroughly clean with alcohol or nitre solvent (be careful not to use anti-adhesive detergent) the inner surface of the bumper of the zone previously identified (see Fig.1) on which will be applied the antenna sensor.

A- Connect the Data cable coming from the ECU to the antenna sensor.

B- Fix through its adhesive the black connection module of the data cable on the inner surface of the bumper, starting from approximately 10-15 cm away from the end of the bumper (fig. 5).

C- Apply a piece of sticking material on the connection and fix it on the bumper by a strong pressure

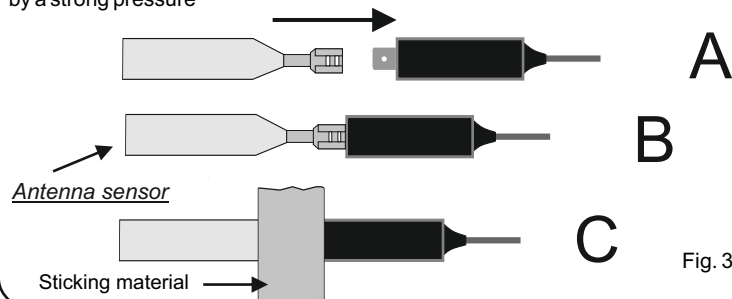


Fig. 3

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MOUNTING THE ANTENNA SENSOR

Start applying the adhesive aluminium tape (antenna sensor) practising a good pressure to make it well adhere to the inner surface of the bumper*.

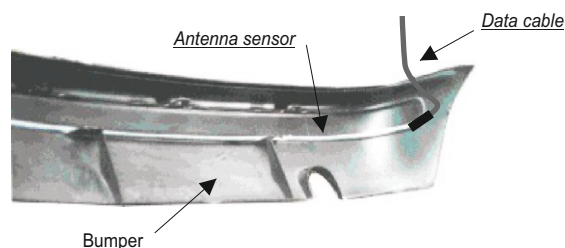


Fig.4

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When the antenna sensor has been attached, covering the whole of the bumper from left to right, the excess length is cut off. Place a piece of the included sticking material at ends of the antenna sensor to ensure a secure fixing onto the bumper surface. It is recommended (but not essential) to cover the antenna with a black anti-rust protection paint of the same type that is applied to the underneath of a car chassis or similar to protect from the elements (do not use silicon paste or adhesive tape).

***NOTA:**

1) It is important to start and finish the application of the tape to about 10-15 cm from both ends of the bumper (fig.5).

2) The antenna sensor can not be applied on metal bumpers.

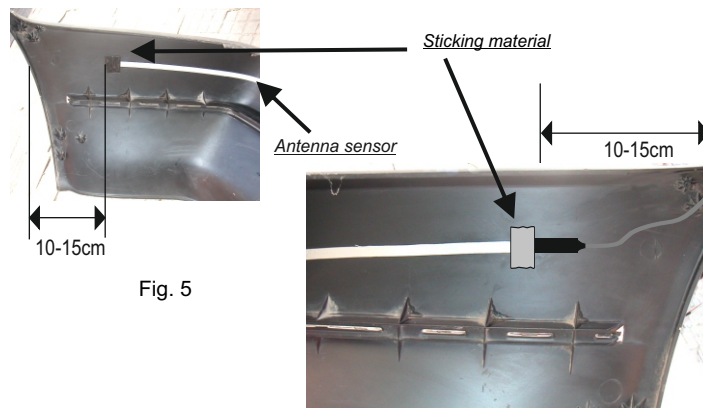


Fig. 5

If the ambient temperature is below 10 °C we recommend heating both the Sticking material and the sticking area on the bumper. Replace the bumper and pull the data cable inside the luggage compartment in order not to leave excess cable outside.

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ELECTRICAL CONNECTIONS

a) Connect the red lead of the power cable to the positive terminal that feeds the reversing lamp.

b) Connect the black lead of the harness to the earth of the reversing lamp.

-- IT ADVISABLE NOT TO CONNECT TO ANY OTHER POINT OF EARTH ON THE CHASSY OF THE CAR --

c) Insert all plug-in connectors into the proper position on the Central Unit (ECU) as per Fig. 6.

Some vehicles are equipped with a metal crash protection bar insert facing the inside surface of the bumper. When this metal surface is too close to the inner surface of the bumper where you have placed the antenna sensor, the distance signal can be reduced.

To adjust the distance signaling is sufficient to change the dip-switch positions (see schematic). Take care that the sensitivity No 1 is the lowest and the number 4 is the highest. The sensibility that we recommend for most cars is the No. 2.

We suggest to carry out test to determine the detection range, pointing out that increasing the sensitivity if it is not necessary, can cause more false alerts.

MOUNTING OF THE WIRELESS DISPLAY

a) Fix, via the double-sided adhesive, the display in a suitable position so as to ensure also a good perception of sound by the driver.

b) Connect the black wire of the power cable of the display to a good ground.

c) Connect the red wire to 12 Volt power under key so that the display is feeded at the "turn on" of the instruments panel.

NOTE:

- The short red cable (receiver antenna) must not be connected.

FINAL TESTING PROCEDURE

a) Turn on the key, insert the back gear. In a fraction of second the control unit performs a check of the functionality of the system and, if everything has been done correctly, three red points appear on the display. Once you have this signal the system becomes operational.

Possible problems and their solutions

1. If the buzzer generates 6 consecutive fast beeps and AL on display control the data cable and its connection to the electronic control unit and make sure that there is not a short circuit antenna/ground.

2. If the display starts flashing all the colours repeated 3 times and ST on display check the connection of data cable with antenna sensor.

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b) Starting from about 1 meter away from the center of the bumper, slowly approach both hands to the bumper in order to simulate an oncoming obstacle. At a distance of about 60/70 cm will be seen the first green led switching on followed by the yellow and finally by the red ones. The acoustic signals, whose repetition rate will increase becoming finally continuous, are contemporary heard if the display switch is in ON position.

WARNING: For a correct simulation be careful to reset the system every time you approach.

c) If the system shows to work regularly it is possible to fix definitely the bumper.

Note: The system starts to give the signaling **only** when the vehicle is being approached to the obstacle; a fixed object in front of the bumper, for instance the hauls hook and a bull bar or the sides walls of a car box, are not signaled and it is not bothered the normal operation of the device.

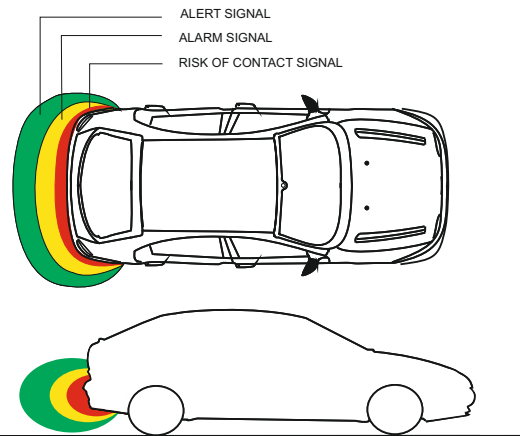


Fig. 6

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USER MANUAL

OPERATING PRINCIPLE

The activation of the device is obtained by the insertion of the back gear and confirmed by the lighting of the 3 red points on the display. Once activated, the system generates around the bumper, on which is installed, a protection zone (Fig. 6).

When any obstacle present in the protection zone tends to approach the bumper it will be signalled by leds and buzzer.

WORKING EXAMPLE

a) As soon as the system is activated at the insertion of the back gear the control functionality of the device is carried out in a fraction of second.

If the control is **OK** you will see the three red points on the display to confirm the proper functioning of the system.

b) When approaching an obstacle the system activates the visual and acoustic signal at a distance between the bumper and obstacle (measured in the central area of the bumper) of about 60 / 70 cm with 3 types of warning:

1) **Switching on** of just the first two green segments to inform the driver that an obstacle is approaching.

2) **Intermittent sound** at a frequency of increasing repetition rate simultaneously with 3 LED color yellow and the word **AL** (ALARM) in the center of the display when the obstacle comes close to the bumper at a distance between 15 and 30 cm.

3) **Switching on** of the first red led, followed by the second one with a continuous sound, simultaneously to the word **St** (STOP) when an obstacle is very close to the bumper (10-15 cm).

- The distances will vary depending on the size of the obstacle and correspond to the central zone of the bumper; on the lateral edges the distances are shorter (see Figure 6).

- The alert occurs only when the vehicle is approaching an obstacle, a fixed object in front of the bumper is only detected after the first movement of approach.

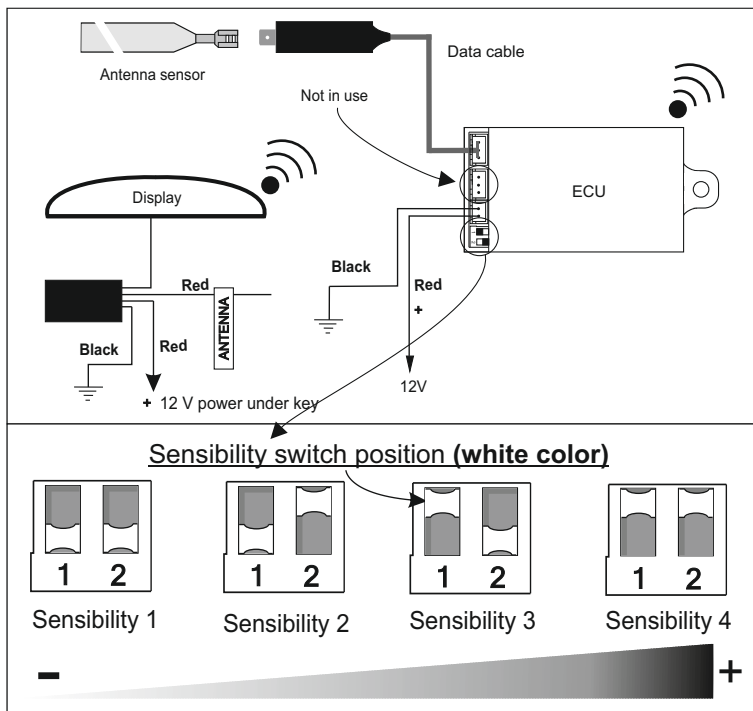
WARNING

1. In presence of rain or high moisture weather, the system reduces his sensibility automatically in order to eliminate a part of false alarms that could be given by movement of water on the bumper.

2. As soon as the system is activated an acknowledgement of the surrounding of the bumper is made.

Consequently **it is very important**, during testing operation, not to switch on the system while you are very close to the central unit and antenna sensor in order not to have false information on the working capability of the system.

During the test you must also take into consideration the fact that, after the first approach to the bumper, any subsequent APPROACH without a reset of the system, can give false interpretations of the functionality of the sensor due to the software specifically created in order to reduce false signaling in the rainy conditions.



TECHNICAL CHARACTERISTICS

- Operating range from 9,5 to 18V
- Max current absorption 70 mA

- Operating temperature from -20 to +90 °C
- Max. Distance to begin detection 70-80 cm



Ecu



Power cable



Data cable



Display



Antenna sensor



Sticking material

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