

## INSTALLATION INSTRUCTIONS & USER MANUAL

Front parking sensor mod. **EPS-DUAL FRONT**

mod. **EPS-DUAL FRONT with DISPLAY**

EPS-DUAL FRONT can be installed only on front 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.

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- 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.

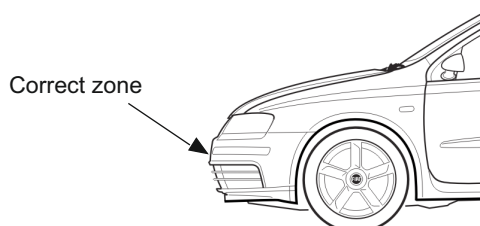


Fig. 1

- b) Disassemble the bumper.

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### STARTING PROCEDURE

- a) Locate a passage where, from the outside at the extremity of the bumper, it is possible to route the RF cable through the engine compartment to the driver's place behind the dashboard.

- b) Through the individuated passages route the RF cable from the dashboard leaving the faston outside. (Fig. 2)

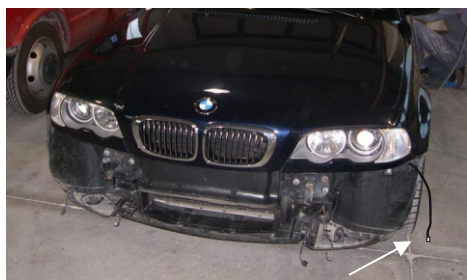


Fig. 2

RF cable

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### MOUNTING THE ANTENNA SENSOR

Thoroughly clean with alcohol or nitro solvent (be careful not to use antiadhesive detergent) the inner surface of the bumper of the zone previously identified (see Fig. 1) on which will be applied the antenna sensor. Starting from the zone where there is the RF cable, start applying the adhesive aluminum tape (antenna sensor) practicing a good pressure to make it well adhere to the inner surface of the bumper\*.

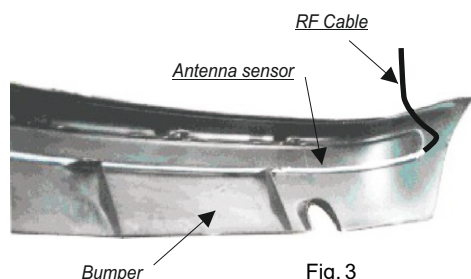


Fig. 3

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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 either 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).

**\*NOTE:**

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

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

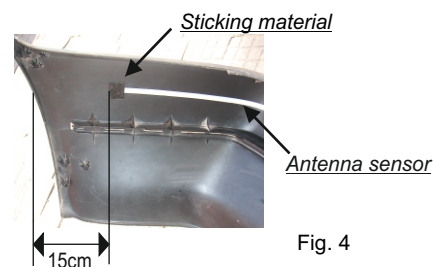


Fig. 4

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- Connect the RF Cable coming from the ECU to the antenna sensor. Apply a piece of sticking material on the connection and fix it on the bumper by a strong pressure (If the ambient temperature is below 10 °C we recommend heating both the mastic and the sticking area on the bumper). It is necessary to use the same material to fix the opposite extremity of the antenna. (Fig. 5).

Replace the bumper and pull the RF Cable inside the engine compartment in order not to leave excess cable outside.

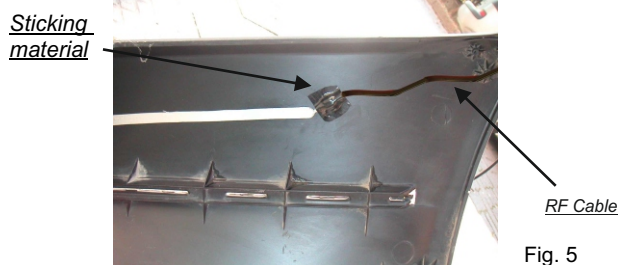


Fig. 5

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### ELECTRICAL CONNECTIONS

- a) The central unit has to be fitted on the inside of the vehicle under the dashboard in the more convenient place where the RF Cable has been routed.

- b) Connect the black wires of the power cable to the negative pole and the red to a 12 Volt subkey through the activation push-button. (the system is so activated pressing the button).

- c) Connect the twin wires black cable of the harness to the buzzer placed in any place where you can easily hear it.

- d) Insert into the ECU all connectors in the proper position (see Fig. 6)

Some vehicles are equipped with a metal crash protection bar insert facing the inside 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 signalling is sufficient to change the dip-switch positions (see schematic). Recall that the sensitivity No 1 is the lowest and the number 4 is the largest.

The sensitivity that we recommend for most cars is the No. 2.

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

### MOUNTING THE BUZZER (mod. EPS-DUAL FRONT)

- a) Mount the EPS-DUAL FRONT buzzer using its adhesive in a proper place in order to ensure a good perception of sound by the driver.  
b) Connect the buzzer cable to the buzzer through its plug-in connector.

### MOUNTING OF DISPLAY (mod. EPS-DUAL FRONT with DISPLAY)

- a) Take the display cable from the electronic module to the rear-view mirror using the appropriate steps as edges of plastic or rubber seals. Fix the display above the rear-view mirror using the adhesive on the back of it.  
b) Connect the display cable to the central module (instead of the buzzer cable) by the proper connector.

### FINAL TESTING PROCEDURE

- a) Turn on the key, press the push-button. In a fraction of second the control unit performs a check of the functionality of the system and, if everything has been done correctly, the buzzer emits an acoustic sound of "OK" (one note). Once you have this signal the system becomes operational.

### Possible problems and their solutions

1. If the acoustic transducer does not emit any signal check all the connections.
2. If the transducer emits an audible warning signal consisting of 2 notes (one high and one low) repeated 3 times) check the connections of RF cable.

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b) Starting from about 1 meter away from the center of the bumper, slowly approach both hands to simulate a parking maneuver. At a distance of about 40/50 cm will be heard the first intermittent signals and then a continuous higher frequency sound at about 10-15 cm from the bumper.

**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:** EPS-DUAL FRONT 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, is not signaled and it is not bothered the normal operation of the device.

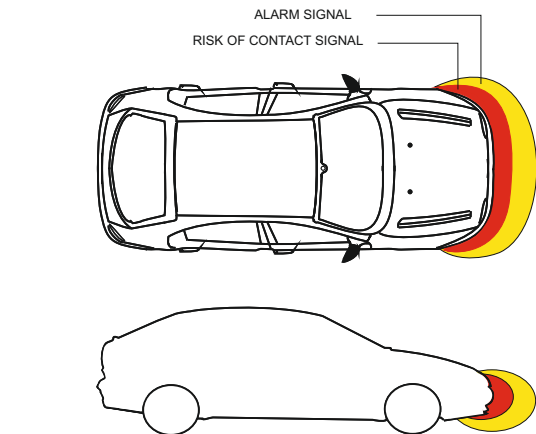


Fig. 6

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## USER MANUAL

### OPERATING PRINCIPLE

EPS-DUAL FRONT is an innovative parking sensor that uses low energy electromagnetic waves and is able to detect the approach of any kind of obstacle.

The activation of the device is obtained by pressing the activation button and confirmed by a signal of "OK". Once activated, the EPS-DUAL FRONT 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 you will hear a series of beeps.

### WORKING EXAMPLE

A) As soon as the EPS-DUAL FRONT is activated the control functionality of the system is carried out in a fraction of second. In case of anomalies the speaker emits an audible warning signal consisting of 2 notes (one high and one low) repeated 3 times. If this happens check the antenna connection to the ECU. If the control is **OK** you hear a signal of one single note to confirm the proper functioning of the system.

B) When approaching an obstacle the system activates the acoustic signal at a distance between the bumper and obstacle (measured in the central area of the bumper) of about 40/50 cm with 2 types of sounds:

1) **an increase in sequence of "BIP" (alert)** when the obstacle comes close to the bumper at a distance between 15 and 60 cm measured on the middle of bumper.

2) **continuous sound at a more acute frequency (risk of contact)** when an obstacle is very close to the bumper (10-15 cm).

#### Note:

- The device should be activated only during parking maneuvers.

- 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 less (see Figure 6)

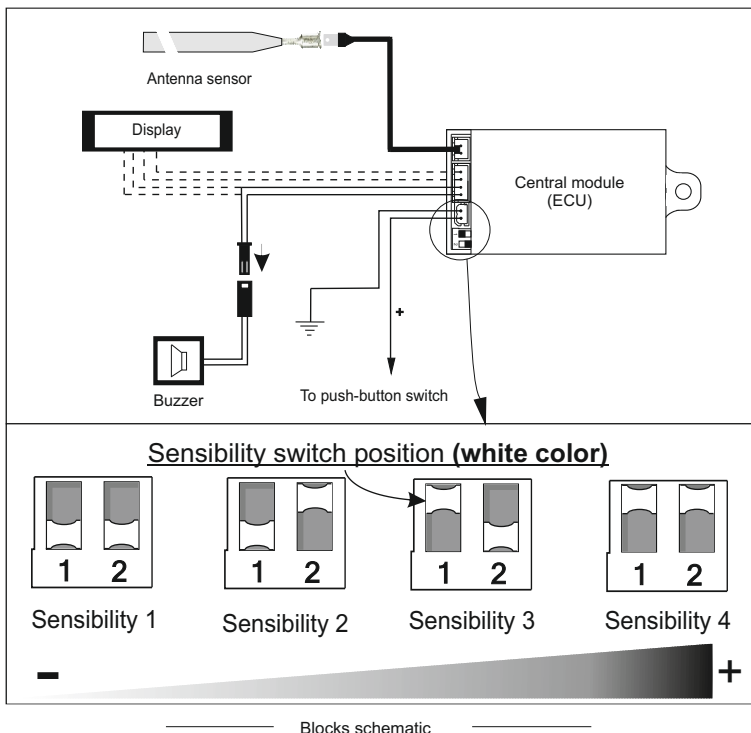
- The alert occurs only when the vehicle is approaching an obstacle, a fixed object in front of the bumper is only detected after the first movement of approach.

#### WARNING

1. In presence of rain or high moisture weather, the system reduces its 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 first reset the system, can give false interpretations of the functionality of the sensor due to special characteristics of the EPS-DUAL FRONT software.



#### 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 50-60 cm



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