Parking Distance Controls

Trouble shooting guide
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This troubleshooting guide is dedicated to rear bumper applications, powered by a traditional (non LED) reverse light line only.

For the location of the parts described in this instruction, please refer to the relevant installation manual included into the kit and to the vehicle’s technical sheet available on the Meta System’s website (technical area).

All the procedures as described in this manual can be carried out without running engine.

In case bumper removal is needed, always check during the removal whether the wire harness connectors are well installed on the sensors. An incorrect/incomplete installation of these connectors might result in water ingress and represents the most common cause of malfunctioning.
When the system is operating normally, a confirmation beep is generated by the ECU when the reverse gear is engaged. In case this beep is not heard and/or the system does not detect objects, refer to the following procedure to define the problem.

Notice: this activation signal is related to the ECU only and doesn’t refer to the completion of a system check phase. Therefore, it is emitted even if all sensors are disconnected.

Check all connections: make sure to have respected the mounting sequence (from A to D) of the sensors onto the bumper and into the ECU (see fitting instructions at page 2.) and to have properly plugged all connectors.

2. No activation of the system when the reverse gear is selected.

- Switch the Ignition ON (+15V).
- Select the Reverse gear.
- Disconnect the main white connector (8 pins) on the ECU (fig. 1)
  - Check the status of the pins (straight and clean) and connect again.
  - Shift to neutral and back to reverse.
  - Did the loudspeaker sound when reconnecting?

Check both the RED (KL15, pin 4) and the BLACK (GND, pin 2) wire with the multimeter (fig. 1). Is the readout as follows:
- KL15 (red wire): between 9V and 15V
- GND (black wire): 0V?

- YES
  - Go to step A
  - Loudspeaker analysis.
- NO
  - Go to step B
  - System power analysis.
A. Loudspeaker Analysis

Remove the red connector (slot 2) from the ECU and connect again (fig. 2). Shift to neutral and back to reverse. Does the loudspeaker work?

**YES**  
Wrong connection during installation

**NO**

Remove the same red connector and check with the multimeter the internal resistance of the loudspeaker and its feeding line. It has to be around 64 Ω (± 10%). Is this value matching?

**YES**

ECU malfunction. Part to be replaced.

**NO**

Loudspeaker and/or feed line malfunction. (0 Ω or <= Ω = failure) Parts to be replaced.

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Fig. 2
B. System Power Analysis

Is the voltage on the reverse gear light between 9 V and 16 V? Make sure that the reverse gear is engaged and the ignition ON.

- **YES**
  - ECU/feeding wire harness malfunction.
  - Parts to be replaced.

- **NO**
  - Function of the reverse light to be repaired.
Meta System’s Parking Distance Controls integrate a Sensors Diagnostics automatic function, allowing to detect any failures on each sensor and inform the driver accordingly. In case a malfunction occurs on one sensor, all others keep working and protecting the bumper.

3. The loudspeaker does not stop sounding.

Switch the ignition ON (+15V) and select the reverse gear.

The loudspeaker emits the diagnostics warning signals, indicating the defective sensor (see Sensors Diagnostics on the fitting manual, just after the masking procedure).

Go to step C "Sensor malfunctioning".

The loudspeaker is constantly sounding or is emitting a continual fast intermittent beep.

Go to step D "Continuous detection".
C. Sensor malfunctioning.

One or more sensors do not operate correctly: unexpected sounding or no sound at all. There might be a painting problem. In fact, the layer of paint must not exceed 90 microns in thickness, to let the ultrasound waves flow without obstructions. Moreover, the sensors must be painted separately from their holders, in order not to create any rigid connection between the parts, which would transmit vibrations from the vehicle to the sensors themselves. Use the cardboard template, part of the kit, to paint the sensors. Lastly, make sure the assembly sensor-holder adheres to what specified into the fitting manual. See also the paragraphs concerning the continuous detection and the false signals reduction (page 9 and 10).
D. Continuous detection.

Are there any objects within the detection area of the sensors?  
YES: Remove all objects.
NO:  
Are the sensors clean from dust, snow, ice, debris and other materials?  
NO: Remove all materials that obstruct the sensor radiation.
YES:  
Are the orientation marks located on the correct position? See fitting manuals at page 7 for ISH (top/bottom) and page 6 for ESH/Plug (right/left side).  
NO: Install the sensors according to the manual.
YES:  
Have you carried out the masking procedure?  
NO: Masking process to be performed.
YES:  
Is the distance sensors-ground lower than 45 cm?  
NO: Go to step n° 4: "False signals reduction".
YES:  
Did you use the inclination correctors to make the sensors tilt upwards of 5° or 10°? (for ESH system only)  
NO: Install inclination correctors.
YES: Program the SET-UP mode to reduce the performances through red/blue wire. See instructions on top of page 15 (English).

Does the system work correctly now?  
YES: OK
NO: Go to step n° 4: "False signals reduction".
This chapter gives you some additional hints that could help you out, in case you still find false signals or the performances of the system are not as expected.

For each sensor, is the silicon ring between the capsule and the holder present and not damaged? (see fitting instructions: fig.3 at page 6 for ISH and fig.4 at page 8 for ESH).

- **NO**: Add the silicon ring.
- **YES**

   **FOR ESH SYSTEM ONLY**
   For each sensor, is the silicon ring between the spring and the internal bumper surface present and not damaged? (see pages 9 & 10 of the manual, under the column “FITTING”).

- **NO**: Add the silicon ring.
- **YES**

   Coupling of sensor and holder: are both the clutch claws on the sensor’s body matching their housing counterparts on the holder? (see fig.3 at page 6 of fitting instructions).

- **NO**: Complete the coupling. Push until you hear the “click”.
- **YES**

   Are the holes on the bumper big enough to let the sensor’s body pass through them easily?

- **NO**: Enlarge a bit the diameter, avoiding the bumper to exert any pressure on the sensor.
- **YES**

   Repeat the masking procedure and readjust sensitivity and offset. Did you solve the problem?

- **NO**: Check again all the installation details or contact the seller for assistance.
- **YES**: OK
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