

ACTIVE ANTENNA drawing 638534

GUIDE TO THE DIAGNOSIS OF IMMOBILIZER FAILURES. TO BE USED IN CASE OF AN ACTIVE ANTENNA REPLACEMENT REQUEST.

The request for antenna replacement could be originated by two different sources.

- 1)** Key programming problems.
- 2)** Problems connected to start-up enabling switch failure.

1) If the fault is due to failure to programme a new key, be reminded to comply with the correct programming procedure both for operation sequence and timing.

If key programming is really impossible, also check for Master transponder correct matching.

This problem can be identified only through the quick sequence of multiple flashes originated after the flash indicating the switching to ON. The flashes identifying the number of programmed keys are supplied by the master key only.

Some vehicles have been programmed with reversed keys. Should this be the case, failure to proceed to key programming is not due any antenna failure.

CORRECT PROGRAMMING

Start with the master key first, and continue with spare keys, then finish with the master key. With reference to the corresponding timing, each key shall be switched to ON and shall stay ON for 2 seconds (tolerance from 1 to 3). Times are checked with a clock, and not counted. Enter also MAX. time between one key and the other one: 10"

Failure to comply with this sequence or even with a single time will invalidate key programming. Should this be the case, the previous programming will apply. The use of the non-programmed key will generate the 3-flash code, identifying a non-programmed transponder.

Under these conditions, problem is never originated by the antenna, as the immobilizer system receives a signal back, but it is incorrect.

2) Should the replacement request be originated by a start-up failure, it should be remembered that the Immobilizer prevents starter motor relay enabling.

In case of engine cranking, but without start-up, the problem does not concern the Immobilizer.

To make a correct diagnosis, check for the presence of the deterrent flashing (if the vehicle has been parked for more than 48 hours, the deterrent flashing will be restored with an ON-OFF switching).

Deterrent flashing is managed by the control unit, and cannot be attributed to the antenna.

This could be a control unit problem, probably not correctly powered.

Switching to ON, the Immobilizer LED shall turn on to signal the switching on, and then turn off to identify start-up enabling. 0.7" flashing

If the problem is due to the Immobilizer, a diagnosis code signal confirmed by the LED steady on to indicate starter/injection-ignition disabling will follow.

07" ON – 2" OFF – 0.5" flashes based on the problem – 2" OFF – steady ON

Diagnosis codes can be identified through LED flashes and by means of the diagnosis tool.

When the Immobilizer problem is current, it is identified with both methods. In case of a stored error, it will be possible to display it only from the error menu of the diagnosis tool.

1-FLASH DIAGNOSIS CODE

This error is identified as a serial fault. (interrupted or short-circuited to ground)

When this code is present, carry out the following checks.

Antenna power supply.

Battery voltage with key ON shall be present across pins 1 and 2. (Pin 1 positive, pin 2 negative).

Test continuity and serial line insulators. Check continuity across antenna pin 3 and the corresponding pin on control unit based on

the vehicle (pin 7 for Marelli MIU systems, pin 29 for Eldor Kubo systems).

Carefully check that connectors are not oxidised.

A more detailed check can be carried out by detecting the voltage of serial line ground.

Under standard operating conditions, immediately after switching to ON, the voltage read with a multimeter will have average values of 6-7 V.

In case of code 1, voltage will be high, i.e. approx. 11V. Should this condition be detected, disconnect connector of injection control unit, and check again.

If serial line voltage becomes 0 Volt, the antenna is definitely faulty.

If, on the contrary, a high voltage value is detected, there could be a control unit inner failure.

2-FLASH DIAGNOSIS CODE

It indicates that the transponder is not detected.

Check the behaviour of the other key.

If both keys confirm this problem, pay attention to possible magnetic interferences or other transponders located close to the antenna.

For this reason, carry out this test with the key only (not placed in a key-ring or other).

If the problem continues, check the correct positioning of the metal ring located inside the locking ring nut of overall ignition switch (MP3, Fuoco, Nexus).

Check also for antenna correct positioning.

It the problem continues, the antenna could be faulty.

It could also prove useful to have the transponder read by another Immobilizer system and check if the error code is the same.

Before replacing the whole antenna, check if switching to ON while opening the top box, the transponder detection changes.

3-FLASH DIAGNOSIS CODE

It indicates the presence of a non-programmed transponder.

This code cannot be connected to an antenna fault.