

GENERIC · POWERTRAIN

P0513

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0513

Incorrect Immobilizer Key

P0513 means the engine control module (ECM) or body control module (BCM) has detected an incorrect immobilizer key during the anti-theft handshake, so it refuses to allow the engine to start. The computer compares a coded signal from the key transponder against its stored authorized key list and sets this code when the response is missing, invalid, or not recognized.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Engine cranks but will not start, or starts and stalls immediately
- Security or immobilizer warning light flashing or staying on
- No communication with the key or a 'key not detected' message on the dashboard
- Intermittent no-start that may resolve after several attempts or a spare key
- Often no symptoms besides the warning light if the fault is stored but the key still works
- Remote keyless entry or push-button start functions may stop working

Common causes, most likely first

- 1 Weak or dead battery in the key fob transponder
- 2 Damaged or unprogrammed key transponder chip
- 3 Faulty immobilizer antenna ring or receiver around the ignition lock
- 4 Corroded or loose wiring between the antenna ring and the immobilizer module
- 5 Immobilizer module or BCM losing its key programming memory
- 6 Aftermarket remote starter or alarm interfering with the immobilizer signal
- 7 Failed ECM or BCM immobilizer circuit after water intrusion or voltage spikes



How to diagnose and fix it

- 1 Replace the key fob battery and retry starting with a spare key to isolate the key
- 2 Scan all modules for immobilizer and body codes, not just the ECM, to see which module set P0513
- 3 Inspect the antenna ring connector and wiring for corrosion, chafing, or loose pins
- 4 Check immobilizer module power, ground, and communication bus integrity with a multimeter
- 5 Reprogram or relearn the key to the immobilizer using a factory-level scan tool
- 6 If relearn fails, substitute a known-good antenna ring or immobilizer module and retest
- 7 Replace and program the failed module only after confirming wiring and key integrity

Before you replace the immobilizer module

- A weak key fob battery is the most common cause, yet many technicians replace the antenna ring first because the key still locks the doors remotely.
- P0513 can be stored by the body control module rather than the engine computer, so a generic engine-only scan may miss the module that actually holds the key data.
- Aftermarket remote starters and alarms frequently splice into the immobilizer circuit and cause intermittent P0513 that disappears when the add-on is disconnected.
- A key that starts the car occasionally does not rule out a failing transponder chip, because temperature and position can change the signal strength.
- Clearing P0513 without a successful key relearn often leaves the vehicle in a no-start state, so diagnosis must confirm the immobilizer handshake before clearing.

Can I keep driving with P0513?

Do not drive the vehicle if it will not start or stalls immediately, because the immobilizer is actively blocking engine operation. If the engine runs normally and only the warning light is on, drive directly to a repair shop and avoid shutting the engine off in an unsafe location until the key is verified.

Tools that help

- Factory-level or enhanced scan tool with immobilizer relearn capability
- Digital multimeter
- Key fob battery tester or replacement battery
- Spare programmed key for comparison testing
- Wiring diagram and breakout box for immobilizer circuit testing



Reading P0513

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 13** The exact fault within that area.

Often seen with

P0512 Starter Request Circuit · **P0514** Battery Temperature Sensor Circuit Range/Performance · **P0562** System Voltage Low · **U0100** Lost Communication With ECM/PCM A

See it working

Watch the animated explainer [How Push-Button Start Works: Keyless Ignition](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0513/>

