

JAGUAR · POWERTRAIN

P1603

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1603 · Jaguar

EEPROM Malfunction

P1603 on Jaguar vehicles indicates that the engine control module (ECM) has detected a fault within its internal electrically erasable programmable read-only memory (EEPROM), which stores critical adaptive learning values and configuration data. The ECM performs a self-check of this non-volatile memory at key-on and during operation, and when the checksum or read/write verification fails, it logs this code and may illuminate the malfunction indicator lamp (MIL).

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Jaguar specific	Medium	Professional	Computer and output circuits

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the instrument cluster, often with no other warning lights.
- Rough running or poor driveability if the corrupted memory affects fuel or ignition adaptations.
- Intermittent stalling or a no-start condition in severe cases where the ECM cannot load essential start-up parameters.
- Erratic transmission shift quality on models where the ECM shares adaptive data with the transmission control module.
- Often no symptoms besides the warning light, especially if the fault is confined to a non-critical memory block.
- Possible loss of learned idle speed or fuel trim values, leading to a temporarily high or low idle after battery disconnect.

Common causes, most likely first

- 1 Internal failure of the EEPROM chip or its supporting circuitry inside the ECM, typically due to age, heat cycling, or voltage spikes.
- 2 Corrupted software or calibration in the ECM caused by a failed reprogramming event or an interrupted flash update.
- 3 Low battery voltage or a voltage spike during cranking that disrupts the ECM's memory write cycle.
- 4 Poor grounds or corroded power connections to the ECM, causing intermittent voltage drops that trigger memory errors.
- 5 Water ingress or physical damage to the ECM connector or circuit board, leading to short circuits in the memory circuit.
- 6 Aftermarket electronic accessories or improper jump-starting that introduce electrical noise into the ECM power supply.



How to diagnose and fix it

- 1 Verify battery voltage and condition, and perform a charging system test to rule out low voltage as the root cause.
- 2 Check and clean the ECM ground points and power connections, inspecting for corrosion or loose terminals.
- 3 Clear the code and perform a road test to see if P1603 returns immediately or only after a specific driving cycle.
- 4 Use a Jaguar-compatible diagnostic scanner to check for other stored codes and to perform an ECM self-test or memory check if available.
- 5 Reprogram or update the ECM software with the latest Jaguar calibration using a factory-level tool, which can rewrite corrupted memory blocks.
- 6 If the code persists after reprogramming and electrical checks, replace and configure the ECM, followed by relearning adaptations and security matching.
- 7 After repair, perform a full adaptive drive cycle and verify that no codes return over several key cycles.

What Most Miss About P1603

- A weak or failing battery is a common trigger for P1603 on Jaguars because the ECM may log a memory error during cranking if voltage drops below a critical threshold.
- This code does not always mean the ECM is scrap; a failed reprogramming attempt or a corrupted calibration file can set it, and a successful reflash often resolves the issue.
- Intermittent ground faults at the ECM connector can mimic an internal EEPROM failure, so always perform a voltage drop test on the ground circuit before condemning the module.
- Some aftermarket alarm or remote start installations tap into the ECM wiring and introduce electrical noise that corrupts memory writes, leading to recurring P1603.
- On certain Jaguar models, P1603 may be stored alongside transmission codes because the ECM shares adaptive data with the transmission control module, and fixing the ECM memory issue may clear both.

Can I keep driving with P1603?

If the engine runs normally and the only symptom is the warning light, you can drive cautiously to a workshop, but avoid long trips or heavy load until the fault is diagnosed. If the engine runs rough, stalls, or fails to start, stop driving and arrange a tow to prevent further ECM damage or unsafe driving conditions.

Tools that help

- Jaguar-compatible diagnostic scanner with ECM programming capability
- Digital multimeter for voltage and ground circuit testing
- Battery load tester and charging system analyzer
- Basic hand tools for accessing ECM connectors and grounds
- Factory service information for wiring diagrams and ECM pinouts



Reading P1603

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Jaguar): its meaning depends on the make.
- 6** Computer and output circuits.
- 03** The exact fault within that area.

Often seen with

P0600 Serial Communication Link Malfunction · **P0601** Internal Control Module Memory Checksum Error · **P0602** Control Module Programming Error · **P0606** PCM Processor Fault · **U0100** Lost Communication With ECM/PCM A

See it working

Watch the animated explainer [Manual Car Driving Simulator: Learn Clutch Control](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/jaguar-p1603/>

