

GENERIC · POWERTRAIN

P2508

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2508

ECM/PCM Power Input Signal High

P2508 indicates that the engine control module (ECM) or powertrain control module (PCM) has detected a high voltage on its dedicated power input circuit, which is the main feed that keeps the computer alive and operating. The module monitors this input and sets the code when the voltage exceeds the expected threshold, often due to a wiring fault, a failing power relay, or a charging system issue.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Intermittent stalling or a no-start condition, especially when the engine is hot or after the vehicle sits
- Electrical accessories behaving erratically or multiple warning lights appearing at once
- The engine may crank but not start if the ECM/PCM loses power during the fault
- Rough running or reduced engine performance if the module resets intermittently

Common causes, most likely first

- 1 Corroded, loose, or damaged battery terminals and cables causing voltage spikes
- 2 A failing ECM/PCM power relay (main relay) that sticks or has high resistance
- 3 Chafed or shorted power wire between the battery and the ECM/PCM, often near the fuse box or engine harness
- 4 A faulty voltage regulator in the alternator causing overcharging and high system voltage
- 5 Poor ground connection for the ECM/PCM, leading to reference voltage errors
- 6 A failing ECM/PCM itself, though this is less common and should be diagnosed last



How to diagnose and fix it

- 1 Perform a visual inspection of the battery terminals, cables, and the ECM/PCM power relay for corrosion or damage
- 2 Use a digital multimeter to measure battery voltage at rest and while running; check for overcharging above 15 volts
- 3 Test the ECM/PCM power relay by swapping it with a known-good relay of the same type and clearing the code
- 4 Check the power wire from the relay to the ECM/PCM for continuity and shorts to voltage using a wiring diagram
- 5 Inspect and clean the ECM/PCM ground connections to ensure a solid return path
- 6 If all external circuits test good, substitute a known-good ECM/PCM and recheck for the code before replacement
- 7 Clear the code and perform a road test to verify the repair, monitoring live data for the power input signal

Don't overlook the charging system

- A failing alternator voltage regulator can push system voltage above 15 volts, triggering P2508 even though the ECM/PCM and its wiring are perfectly fine.
- Intermittent P2508 codes often trace to a power relay that fails only when hot, so testing the relay cold may not reveal the fault.
- A weak or corroded ground for the ECM/PCM can cause the module to see a high voltage on its power input relative to ground, mimicking a short to power.
- Some vehicles set P2508 when the battery is disconnected or replaced without a memory saver, so check for recent electrical work before condemning parts.
- The code does not always mean the ECM/PCM is defective; in many cases, the module is the victim of an external voltage spike or wiring issue.

Can I keep driving with P2508?

If the check engine light is on but the engine runs normally, you can drive cautiously to a repair shop, but avoid long trips and heavy electrical loads. If the engine stalls, cranks without starting, or multiple warning lights appear, stop driving and have the vehicle towed to prevent a no-start situation.

Tools that help

- Digital multimeter (DMM)
- OBD-II scan tool with live data capability
- Test light or power probe
- Wiring diagram for the specific vehicle
- Relay puller and jumper wires



Reading P2508

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

Often seen with

P0562 System Voltage Low · **P0563** System Voltage High · **P0600** Serial Communication Link Malfunction · **P2507** ECM/PCM Power Input Signal Low · **P2509** ECM/PCM Power Input Signal Intermittent

See it working

Watch the animated explainer [Four-Stroke Engine Notebook: The Otto Cycle Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2508/>

