

GENERIC · POWERTRAIN

P01B3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01B3

Alternative Fuel Tank A Level Sensor Circuit Intermittent/Erratic

P01B3 indicates that the powertrain control module has detected an intermittent or erratic signal from the fuel level sensor in the alternative fuel tank, designated as Tank A. The computer expects a steady voltage or resistance value that changes smoothly with fuel level, but instead sees the signal jump, drop out, or behave unpredictably over time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- The fuel gauge may fluctuate, drop to empty, or read full when the tank is not, especially over bumps or during cornering.
- A warning light on the dashboard, often accompanied by a message to service the alternative fuel system.
- The vehicle may switch back to gasoline sooner than expected or refuse to run on alternative fuel if the level is misread.
- Poor fuel economy or unexpected fuel gauge behavior that does not match actual consumption.
- In some cases, no symptoms besides the warning light, because the fault is intermittent and the gauge still works most of the time.
- A stored pending code or freeze-frame data showing the erratic signal occurred under specific conditions such as low fuel level or temperature extremes.

Common causes, most likely first

- A faulty fuel level sensor inside the alternative fuel tank, often due to wear on the sensor's resistive track or float mechanism.
- Damaged or chafed wiring between the sensor and the control module, especially where the harness passes near sharp edges or moving suspension parts.
- Corroded or loose electrical connectors at the tank, sensor, or module, allowing intermittent contact.
- A failing fuel tank pressure sensor or evap system component that shares a reference or ground circuit with the level sensor.
- A problem with the alternative fuel control module itself, such as internal solder cracks or water intrusion.
- A poor ground connection for the tank sensor or module, causing voltage fluctuations that mimic a sensor fault.
- Aftermarket accessories or improper previous repairs that tapped into the sensor wiring and introduced noise or resistance.



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data to see the exact conditions when the code set, then clear the code and test-drive while monitoring the fuel level sensor voltage or resistance in real time.
- 2 Visually inspect the sensor wiring and connectors at the alternative fuel tank for chafing, corrosion, or loose pins, and wiggle-test the harness while watching the scan tool data.
- 3 Measure the sensor's resistance or voltage at the tank connector and compare it with the manufacturer's specification for the current fuel level, looking for jumps or dropouts when tapping the tank.
- 4 Check the sensor's ground circuit for excessive voltage drop under load, and clean or tighten any suspect ground points.
- 5 If the sensor signal is erratic at the sensor itself, remove the fuel level sensor and inspect the float arm, pivot, and resistive card for wear, debris, or sticking.
- 6 Replace the fuel level sensor or sending unit if it fails the resistance sweep test, and verify that the new unit moves smoothly through its full range.
- 7 After repair, clear the codes and perform a thorough test drive over varying road surfaces and fuel levels to confirm the signal remains stable and the code does not return.

Why an erratic fuel level sensor fools everyone

- A fuel level sensor can test perfectly on a stationary vehicle and still set P01B3 because the fault only appears when the float arm vibrates over rough roads or during fuel slosh.
- Many technicians replace the sensor only to find the real problem is a chafed wire in the harness near the tank, so always wiggle-test the harness while watching live data before condemning the sensor.
- The code can be set by a poor ground shared with the evap system or other tank-mounted components, so a voltage drop test on the ground circuit is essential and often overlooked.
- An intermittent sensor signal may cause the alternative fuel system to default to gasoline, leading to complaints of poor fuel economy that have nothing to do with the engine.
- Aftermarket remote starters or alarm systems tapped into the fuel gauge wiring can introduce electrical noise that mimics an erratic sensor, so check for non-factory wiring before replacing parts.

Can I keep driving with P01B3?

You can generally continue driving because the fault is intermittent and does not affect engine safety, but avoid relying on the fuel gauge for accurate range and refuel before the tank gets low. If the vehicle switches to gasoline unexpectedly or the gauge becomes completely unreliable, have it diagnosed soon to prevent running out of alternative fuel.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage drop functions
- Backprobe pins or breakout leads for testing connectors without damage
- Fuel tank sending unit wrench or lock ring tool
- Service information for sensor resistance specifications and wiring diagrams

Reading P01B3

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
1	Fuel and air metering.
B3	The exact fault within that area.

Often seen with

P01B2 Alternative Fuel Tank A Level Sensor Circuit High · **P01B4** Alternative Fuel Rail Temperature Sensor Circuit · **P0460** Fuel Level Sensor Circuit Malfunction · **P0461** Fuel Level Sensor Circuit Range/Performance · **P0463** Fuel Level Sensor Circuit High Input

See it working

Watch the animated explainer [How Coil-on-Plug Ignition Works: Coil and Spark Plug](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01b3/>

