



P2C51

Fuel Level Sensor A/B Correlation

P2C51 indicates that the powertrain control module (PCM) has detected a disagreement between the two fuel level sensor signals, Sensor A and Sensor B, that exceeds the calibrated tolerance for the current fuel level. The PCM compares the two readings to verify that the fuel gauge and fuel level input are accurate, and it sets this code when the correlation between the sensors falls outside the expected range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Hybrid propulsion

Symptoms you may notice

- Fuel gauge reads incorrectly or fluctuates erratically
- Fuel gauge may show empty when the tank is full, or full when the tank is empty
- Low fuel warning light may illuminate at the wrong time
- Often no symptoms besides the warning light
- Possible inaccurate distance-to-empty or fuel economy readings
- In some cases, the engine may stumble or stall if the PCM uses fuel level for load calculation

Common causes, most likely first

- Faulty fuel level sensor A or B (sending unit) due to wear or contamination
- Wiring damage or corrosion in the fuel level sensor circuits
- Poor electrical connection at the fuel pump module connector
- Failed fuel pump module assembly (if sensors are integrated)
- PCM software issue or internal fault (rare)
- Contaminated fuel or debris affecting sensor float movement

How to diagnose and fix it

- Verify the fuel gauge operation and check for any related technical service bulletins (TSBs)
- Use a scan tool to read live data for both fuel level sensors and compare readings while slowly adding fuel
- Inspect the wiring and connectors at the fuel tank for corrosion, chafing, or loose pins
- Perform a resistance test on each fuel level sensor and compare to specifications
- If sensors are accessible, remove and inspect the fuel pump module for mechanical binding or contamination
- Replace the faulty fuel level sensor or fuel pump module assembly as needed
- Clear the code and verify the repair by test-driving and monitoring sensor correlation



What Most Techs Miss on P2C51

- A common mistake is replacing the fuel pump module without first checking the sensor signal circuits for voltage drops or intermittent opens.
- The code can be set by a fuel level sensor that is mechanically stuck or has a dead spot, even if the gauge appears to work normally at most levels.
- On some vehicles, the fuel level sensors are part of the fuel pump module and cannot be serviced separately, leading to unnecessary pump replacement if diagnostics are skipped.
- Corrosion at the fuel tank harness connector is a frequent hidden cause, especially in areas with road salt or high humidity.
- The PCM may set P2C51 only after a certain number of key cycles or fuel level changes, so a single clear may not confirm the repair.

Can I keep driving with P2C51?

The vehicle is generally safe to drive with this code because it primarily affects fuel gauge accuracy, but you should refuel before the tank is empty and avoid relying on the distance-to-empty display until the fault is repaired.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Fuel pressure gauge (if needed for related checks)
- Socket set and trim removal tools
- Service information for sensor resistance specifications

Reading P2C51

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 51** The exact fault within that area.

Often seen with

P0460 Fuel Level Sensor Circuit Malfunction · **P0461** Fuel Level Sensor Circuit Range/Performance · **P0462** Fuel Level Sensor Circuit Low Input · **P0463** Fuel Level Sensor Circuit High Input · **P2066** Fuel Level Sensor 'B' Performance



See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c51/>

