

GENERIC · POWERTRAIN

P01AB

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01AB

Alternative Fuel Tank Temperature Sensor Range/Performance

P01AB indicates that the powertrain control module (PCM) has detected an out-of-range or erratic signal from the alternative fuel tank temperature sensor circuit. The computer compares the sensor's voltage or resistance against expected values for the current operating conditions and flags a fault when the reading falls outside a calibrated window or fails a rationality check.

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

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard
- Often no symptoms besides the warning light, especially if the alternative fuel system continues to operate normally
- Rough running or hesitation when switching between gasoline and alternative fuel
- Poor fuel economy or unexpected changes in alternative fuel consumption
- Hard starting or stalling when the vehicle is running on the alternative fuel
- Incorrect fuel gauge or range display for the alternative fuel tank

Common causes, most likely first

- 1 Faulty alternative fuel tank temperature sensor (open, shorted, or out-of-calibration element)
- 2 Damaged or corroded wiring harness or connector at the sensor or PCM
- 3 High resistance or open circuit in the sensor signal or ground circuit
- 4 Failed or leaking alternative fuel tank pressure/temperature combination sensor (if integrated)
- 5 PCM software calibration issue or internal driver fault (less common)
- 6 Contamination or physical damage to the sensor from fuel quality or tank debris



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and any stored or pending codes to confirm the fault conditions
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose pins
- 3 Measure the sensor's resistance or voltage at the connector and compare to the manufacturer's specification for the current temperature
- 4 Check the signal circuit for continuity and short-to-ground or short-to-power faults using a digital multimeter
- 5 Verify the ground circuit back to the PCM has low resistance and is secure
- 6 If the sensor is accessible, test it with a heat source while monitoring the scan tool data to confirm it responds smoothly and within range
- 7 Replace the sensor or repair the wiring as needed, clear codes, and verify the repair with a road test that includes alternative fuel operation

Why this code often misleads

- A common trap is replacing the sensor when the real problem is a chafed wire near the tank that only shorts when the suspension moves, so always wiggle-test the harness while watching live data.
- Some vehicles use a combined tank temperature and pressure sensor, and a pressure-side fault can set a temperature range code, so check both functions before condemning the part.
- The PCM may set P01AB only after a cold-start rationality check, meaning the fault can be intermittent and not present during a warm bay inspection.
- A weak or failing alternative fuel pump module can cause temperature fluctuations that mimic a sensor fault, so review fuel system live data alongside the temperature signal.
- After repairs, some PCMs require a relearn or adaptation reset before the code will clear permanently, and skipping this step leads to a false comeback.

Can I keep driving with P01AB?

The vehicle is generally safe to drive with this code because it does not directly affect engine safety or emissions in most cases, but avoid extended driving if you notice rough running or fuel switching problems. Have the fault diagnosed soon to prevent potential alternative fuel system performance issues.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wiring diagram for the alternative fuel tank temperature sensor circuit
- Heat gun or temperature probe for sensor response testing
- Basic hand tools for connector and sensor access



Reading P01AB

- 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.
- AB** The exact fault within that area.

Often seen with

P01A8 Alternative Fuel Rail/System Pressure - Too Low · **P01A9** Alternative Fuel Rail/System Pressure - Too High · **P01AA** Alternative Fuel Tank Temperature Sensor Circuit · **P01AC** Alternative Fuel Tank Temperature Sensor Circuit Low · **P01AD** Alternative Fuel Tank Temperature Sensor Circuit High

See it working

Watch the animated explainer [How an EGR Valve Works: Exhaust Gas Recirculation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01ab/>

