

GENERIC · POWERTRAIN

P01B5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01B5

Alternative Fuel Rail Temperature Sensor Performance

P01B5 indicates that the powertrain control module (PCM) has detected an out-of-range or irrational signal from the alternative fuel rail temperature sensor, which monitors the temperature of the fuel in the high-pressure rail on a flex-fuel or alternative-fuel vehicle. The PCM compares this reading with other sensor inputs and sets the code when the circuit performance does not match expected values under the current operating conditions.

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 fault is intermittent
- Rough idle or hesitation when running on alternative fuel such as E85 or compressed natural gas
- Reduced fuel economy or poor drivability during cold starts
- Possible stalling or difficulty starting in extreme temperatures
- In rare cases, the vehicle may enter limp mode to protect the fuel system

Common causes, most likely first

- 1 Faulty alternative fuel rail temperature sensor
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Poor electrical connection at the PCM
- 5 Contaminated or degraded alternative fuel affecting sensor response
- 6 Internal PCM fault (uncommon)



How to diagnose and fix it

- 1 Use an OBD-II scanner to retrieve the code and freeze-frame data, then visually inspect the sensor and wiring for obvious damage
- 2 Check the sensor's resistance or voltage output against the manufacturer's specification using a multimeter
- 3 Perform a wiggle test on the sensor harness and connectors while monitoring live data to detect intermittent faults
- 4 Verify the integrity of the signal and ground circuits from the sensor to the PCM, repairing any opens or shorts
- 5 Replace the alternative fuel rail temperature sensor if it fails electrical testing
- 6 Clear the code and perform a road test to confirm the repair, ensuring the monitor runs to completion

What most technicians overlook with P01B5

- A common mistake is replacing the sensor without checking the harness, as chafed wires near the fuel rail often cause this code.
- The code can be set by a fuel contamination issue that alters the sensor's thermal response, so fuel quality should be verified.
- Intermittent faults may only appear under specific temperature or vibration conditions, making live data monitoring essential.
- The PCM may set this code even when the sensor is functioning but the signal is skewed by a poor ground connection.
- Always check for related codes in the alternative fuel system before assuming the rail temperature sensor is the sole culprit.

Can I keep driving with P01B5?

You can generally continue driving with this code, but avoid aggressive acceleration or heavy loads until it is diagnosed, as the fault may affect fuel delivery and emissions. If drivability symptoms appear, have the vehicle inspected promptly.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Basic hand tools for sensor removal
- Heat gun or temperature probe for sensor testing



Reading P01B5

- 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.
- B5** The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P01B6** Alternative Fuel Rail Temperature Sensor Circuit Low · **P01B7** Alternative Fuel Rail Temperature Sensor Circuit High · **P01B8** Alternative Fuel Rail Temperature Sensor Circuit Intermitten

See it working

Watch the animated explainer [How a Padlock Works: Pin Tumbler Lock in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01b5/>

