



## P01BD

# Engine Oil Temperature Sensor B Circuit Intermittent/Erratic

P01BD means the engine control module (ECM) has detected an intermittent or erratic signal from the engine oil temperature (EOT) sensor B circuit, which is typically a second temperature sensor used for monitoring oil conditions. The ECM sets this code when the sensor voltage jumps unpredictably or drops out momentarily, rather than reading a steady temperature.

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

## Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Erratic or fluctuating oil temperature gauge readings on vehicles equipped with a gauge
- Intermittent poor engine performance or reduced fuel economy if the ECM relies on the sensor for protection strategies
- Possible activation of a limp-home mode or reduced power in some vehicles when the signal is lost
- Cold-start drivability issues or rough idle if the sensor affects fuel enrichment
- In rare cases, an overheating warning if the ECM misinterprets oil temperature data

## Common causes, most likely first

- 1 Faulty engine oil temperature sensor B, such as an internal short or open circuit that causes erratic resistance
- 2 Damaged or corroded wiring harness between the sensor and the ECM, often due to chafing, heat exposure, or oil contamination
- 3 Loose or corroded electrical connector at the sensor or ECM, leading to intermittent contact
- 4 Poor ground connection for the sensor circuit, causing voltage fluctuations
- 5 Failed ECM driver circuit for the sensor, though this is less common
- 6 Aftermarket or incorrect sensor installed that does not match the OEM resistance curve
- 7 Oil sludge or debris blocking the sensor tip, causing slow or erratic response



## How to diagnose and fix it

- 1 Inspect the sensor connector and wiring for damage, corrosion, or loose pins, and repair as needed
- 2 Check the sensor resistance with a multimeter and compare to the manufacturer's specification across temperature ranges
- 3 Backprobe the sensor signal circuit at the ECM and monitor for intermittent voltage drops while wiggling the harness
- 4 Perform a voltage drop test on the ground circuit to rule out poor grounding
- 5 Replace the engine oil temperature sensor B if resistance testing or live data confirms erratic behavior
- 6 Clear the code and test-drive the vehicle under various conditions to verify the repair
- 7 If the code persists, diagnose the ECM and its connections, and reprogram or replace only if confirmed faulty

## What the oil temperature sensor B really does

- Many vehicles use a second oil temperature sensor for oil life monitoring or for protecting the engine during high-load conditions, so a fault may not affect basic drivability but can impact long-term reliability. Intermittent codes often appear only under specific conditions like cold starts or after extended idling, so a simple key-on test may not reveal the problem.
- A common misdiagnosis is replacing the sensor when the real issue is a chafed wire near the exhaust manifold or a corroded ground point that only acts up when hot.
- Some vehicles share the sensor ground with other sensors, so a fault in a different circuit can cause erratic readings on the oil temperature sensor B circuit.

After replacing the sensor, always clear the adaptive learning values and perform a relearn procedure if required, otherwise the code may return until the ECM recalibrates.

## Can I keep driving with P01BD?

You can generally continue driving with this code because it rarely causes immediate safety or performance issues, but avoid heavy towing or sustained high-speed driving until it is repaired, as the ECM may not protect the engine properly if oil temperature data is erratic.

## Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Backprobe pins or breakout box
- Heat gun and thermometer for testing sensor resistance



### Reading P01BD

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

### Often seen with

**P0196** Engine Oil Temperature Sensor Range/Performance · **P0197** Engine Oil Temperature Sensor Low · **P0198** Engine Oil Temperature Sensor High · **P01BC** Engine Oil Temperature Sensor B Circuit High · **P01BE** Fuel Rail Pressure Sensor Circuit Bank 2

### See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01bd/>

