



P2EBE

Crankcase Temperature Sensor Circuit Low

P2EBE indicates that the powertrain control module (PCM) has detected a low voltage signal from the crankcase temperature sensor circuit, which typically means the sensor is reading a temperature that is unrealistically low or the circuit is shorted to ground. The PCM sets this code when the signal voltage falls below the calibrated minimum for a set period, often indicating a wiring fault, a failed sensor, or a poor connection.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Possible rough running or poor fuel economy if the PCM uses crankcase temperature to adjust fuel delivery or other parameters.
- In cold weather, the engine may be harder to start or may idle poorly if the sensor is misreporting temperature.
- In some vehicles, the radiator cooling fan may run continuously or not at all due to incorrect temperature data.
- A scan tool may show an unrealistic crankcase temperature reading, such as -40°F (-40°C) or another fixed low value.

Common causes, most likely first

- 1 A short to ground in the signal wire between the crankcase temperature sensor and the PCM.
- 2 A faulty crankcase temperature sensor that has failed and is sending a low voltage signal.
- 3 Corroded, loose, or damaged electrical connectors at the sensor or PCM.
- 4 A defective PCM, though this is less common and should be diagnosed last.
- 5 Wiring harness damage from chafing, heat, or rodent damage causing the signal wire to contact ground.
- 6 An open circuit in the ground circuit for the sensor, which can cause a low signal voltage.
- 7 Aftermarket accessories or improper repairs that have tapped into the sensor wiring and altered its resistance.



How to diagnose and fix it

- 1 Use an OBD-II scan tool to verify the code and check the live data for the crankcase temperature sensor reading to confirm it is abnormally low.
- 2 Visually inspect the sensor and its wiring for obvious damage, corrosion, or loose connections, and repair as needed.
- 3 Disconnect the sensor and measure the resistance across its terminals with a multimeter, comparing to the manufacturer's specification for the current ambient temperature.
- 4 Check the signal wire for a short to ground by measuring resistance between the sensor connector terminal and a known good ground with the sensor disconnected.
- 5 Inspect the ground circuit for the sensor, ensuring it has a clean, tight connection to ground and low resistance.
- 6 If the wiring and connections are good, replace the crankcase temperature sensor with a quality part and clear the code.
- 7 After repairs, clear the diagnostic trouble codes and perform a road test to verify the code does not return and the live data reads correctly.

Crankcase Sensor Low Voltage Traps

- A common misdiagnosis is replacing the crankcase temperature sensor when the real problem is a chafed signal wire shorting to ground near the exhaust manifold or under the intake, so always inspect the harness before condemning the sensor.
- The crankcase temperature sensor is often integrated into the oil level sensor or the oil pan, and on some vehicles it shares a circuit with other sensors, so a fault in a related component can set P2EBE.
- A low voltage code can be set by a poor ground connection at the sensor or at the engine block, which is easy to overlook when focusing only on the signal wire.
- In cold climates, a failing sensor may read correctly at startup but drop out as the engine warms, so intermittent codes require checking live data during a test drive.
- The PCM may use crankcase temperature to estimate oil viscosity and adjust variable valve timing or fuel injection, so ignoring this code can lead to driveability issues even if the engine seems to run fine.

Can I keep driving with P2EBE?

It is generally safe to drive with P2EBE because the fault rarely causes immediate breakdown, but avoid extended driving if you notice rough running or poor fuel economy, and have the issue diagnosed soon to prevent potential long-term engine wear or emissions problems.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire repair kit with heat shrink and soldering tools
- Electrical contact cleaner
- Vehicle-specific service information for resistance specifications

Reading P2EBE

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
BE	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 · **P2EBF** Battery Charging Mode Switch Stuck · **P2EC0** Turbocharger Compressor Outlet Temperature Sensor Circuit Lo

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2ebe/>

