

GENERIC · POWERTRAIN

P0517

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0517

Battery Temperature Sensor Circuit High

P0517 indicates the battery temperature sensor circuit is reporting a voltage higher than the powertrain control module expects, which usually means the sensor is disconnected, has a broken ground, or the signal wire is shorted to voltage. The computer uses this sensor to protect the battery from overheating during charging, so it sets the code when the signal stays above the normal range for a set time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms.
- Battery may overcharge or undercharge if the fault affects charging strategy.
- Reduced fuel economy or charging system performance in some vehicles.
- In rare cases, the engine may enter a limited power mode or fail to start if the battery temperature signal is used for other calculations.
- No noticeable drivability issues in most cases, especially if the sensor is only used for battery protection.

Common causes, most likely first

- 1 Battery temperature sensor connector unplugged or corroded, causing an open circuit.
- 2 Broken or chafed signal wire between the sensor and the powertrain control module.
- 3 Failed battery temperature sensor (open internally or shifted resistance).
- 4 Poor ground connection for the sensor circuit, often at the battery terminal or chassis point.
- 5 Short to voltage on the signal wire, sometimes from adjacent wiring damage.
- 6 Faulty powertrain control module (rare, but possible if all other checks pass).



How to diagnose and fix it

- 1 Inspect the battery temperature sensor connector and wiring for damage, corrosion, or loose pins; repair as needed.
- 2 Measure sensor resistance with a multimeter and compare to the manufacturer's temperature-resistance chart; replace the sensor if out of spec.
- 3 Check for battery voltage on the signal wire with the sensor disconnected; if present, trace and repair the short to voltage.
- 4 Verify ground continuity from the sensor connector to the battery negative or chassis ground; clean or repair grounds as necessary.
- 5 Clear the code and test-drive to see if it returns; if it does, perform a wiggle test on the harness while monitoring live data.
- 6 If all wiring and the sensor are good, check for technical service bulletins or known issues for the specific vehicle before condemning the powertrain control module.
- 7 Replace the powertrain control module only after confirming all other circuits are intact and the fault persists.

What the battery temperature sensor really does

- Many vehicles do not use a separate battery temperature sensor; instead, they infer temperature from the intake air or ambient sensor, so P0517 may not apply even if the code is listed in a generic table.
- A common mistake is replacing the battery when the actual problem is a disconnected sensor connector that was left unplugged during a previous battery service.
- The sensor is often integrated into the battery current sensor or mounted on the negative battery cable, so technicians may overlook it when diagnosing charging issues.
- P0517 can be set by a short to voltage on the signal wire from a nearby component, such as a faulty alternator or starter wiring, so inspect for recent repairs or aftermarket accessories.
- In some vehicles, the battery temperature sensor signal is used for idle speed control or fuel economy calculations, so a fault can cause subtle driveability complaints beyond charging.

Can I keep driving with P0517?

You can generally continue driving with P0517 because it rarely causes an immediate safety risk, but avoid long trips or heavy electrical loads until the fault is repaired to prevent potential battery overcharging or undercharging.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Contact cleaner and dielectric grease



Reading P0517

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 17** The exact fault within that area.

Often seen with

P0516 Battery Temperature Sensor Circuit Low · **P0518** Idle Air Control Circuit Intermittent · **P0519** Idle Air Control System Performance · **P0562** System Voltage Low · **P0563** System Voltage High

See it working

Watch the animated explainer [Master the Four-Stroke Engine Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0517/>

