

GENERIC · POWERTRAIN

P0515

OBD-II TROUBLE CODE

P0515

Battery Temperature Sensor Circuit

P0515 indicates that the powertrain control module (PCM) has detected an out-of-range signal from the battery temperature sensor circuit, which is used to estimate battery temperature for charging and starting strategy. The PCM compares the sensor voltage to expected values and sets the code when the signal falls outside the normal operating range for a calibrated time.

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

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially in mild climates.
- Possible slight decrease in fuel economy or charging system performance.
- In cold weather, the engine may crank slower or the charging system may not optimize voltage.
- In some vehicles, a message indicating a charging system fault or battery issue may appear.
- Rarely, the engine may stall or hesitate if the PCM misinterprets battery temperature for fuel and spark control.

Common causes, most likely first

- 1 Faulty battery temperature sensor (BTS) or sensor element inside the battery.
- 2 Damaged or corroded wiring or connector at the sensor or PCM.
- 3 Open or short circuit in the signal or ground circuit.
- 4 PCM internal fault or corrupted calibration.
- 5 Poor battery terminal connection or ground causing voltage reference issues.
- 6 Aftermarket battery without a compatible temperature sensor, if equipped.



How to diagnose and fix it

- 1 Inspect the battery temperature sensor connector and wiring for corrosion, damage, or loose pins; clean or repair as needed.
- 2 Measure the sensor resistance with a multimeter and compare to the manufacturer's temperature-resistance chart; replace the sensor if out of specification.
- 3 Check the signal circuit voltage at the sensor connector with the key on, engine off; verify it is within the expected range (typically 0.5–4.5 volts).
- 4 Test the ground circuit for continuity to the PCM or chassis ground; repair any open or high resistance.
- 5 Clear the diagnostic trouble codes (DTCs) and perform a drive cycle to verify the code does not return.
- 6 If the sensor and wiring are good, check for technical service bulletins (TSBs) or PCM software updates related to the battery temperature sensor circuit.
- 7 As a last resort, substitute a known-good PCM for testing if all other checks pass and the code persists.

Battery temperature sensor circuit pitfalls

- A weak or failing battery can cause the sensor to read incorrectly, so always load-test the battery before condemning the sensor.
- Corrosion inside the sensor connector often mimics a failed sensor, so inspect the pins carefully before replacing parts.
- On some vehicles, the battery temperature sensor is integrated into the battery current sensor or battery terminal, making the entire assembly the replacement item.
- The PCM may use battery temperature to adjust charging voltage, so a fault can lead to undercharging or overcharging that shortens battery life.
- A P0515 can be set by a loose battery hold-down that allows the sensor to vibrate and intermittently lose connection.

Can I keep driving with P0515?

The vehicle is generally safe to drive with P0515 because it does not affect immediate engine operation, but avoid ignoring it for long periods as charging system performance may be compromised. Have the circuit inspected soon to prevent battery damage or a no-start condition.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Battery load tester
- Wiring diagram for the specific vehicle
- Socket set and trim tools for sensor access



Reading P0515

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

Often seen with

P0516 Battery Temperature Sensor Circuit Low · **P0517** Battery Temperature Sensor Circuit High · **P0562** System Voltage Low · **P0563** System Voltage High · **P0AFA** Hybrid/EV Battery System Voltage Low

See it working

Watch the animated explainer [Four-Stroke Engine Notebook: The Otto Cycle Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0515/>

