

GM · POWERTRAIN

P1493

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1493 · GM

Battery Temperature Sensor Voltage Too Low

P1493 on a GM vehicle means the powertrain control module (PCM) has detected a battery temperature sensor signal voltage that is lower than the expected range, typically below about 0.2 volts. The PCM uses this sensor to protect the battery from overheating during charging, and a low voltage signal tells the module the battery is either extremely cold or the circuit is shorted to ground.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light or service vehicle soon message, often with no other noticeable symptoms
- Battery warning light may appear if the charging system is affected
- Slightly reduced fuel economy or charging system performance in some cases
- In rare instances, the engine may idle poorly or hesitate if the PCM misinterprets battery temperature
- No drivability issues at all in many cases, especially if the sensor is only intermittently faulty

Common causes, most likely first

- 1 Battery temperature sensor internal failure causing a short to ground
- 2 Damaged or chafed sensor wiring shorting the signal circuit to ground
- 3 Corroded or loose electrical connector at the battery temperature sensor
- 4 Faulty PCM or body control module (BCM) interpreting the signal incorrectly, though this is less common
- 5 Aftermarket battery or terminal replacement that omitted or damaged the sensor
- 6 Water intrusion into the sensor connector or wiring harness

How to diagnose and fix it

- 1 Inspect the battery temperature sensor connector and wiring for corrosion, damage, or loose pins
- 2 Measure the sensor resistance with a multimeter and compare to GM specifications for the ambient temperature
- 3 Check the signal circuit voltage at the sensor connector with the key on and sensor disconnected to verify the PCM reference voltage
- 4 Perform a wiggle test on the harness while monitoring sensor voltage to detect intermittent shorts
- 5 Replace the battery temperature sensor if resistance is out of specification or the signal is shorted internally
- 6 Clear the diagnostic trouble code (DTC) and verify the repair by driving the vehicle through a complete drive cycle

Battery temperature sensor faults often misdiagnosed

- A low voltage signal can be caused by a short to ground anywhere along the signal circuit, not just the sensor itself, so always check the harness before replacing parts.
- Some GM vehicles use the battery current sensor integrated into the negative battery cable, and a faulty cable assembly can set P1493 even though the sensor itself tests good.
- The PCM may default to a fixed battery temperature value when the sensor fails, which can affect charging system operation and lead to a no-start condition over time if ignored.
- After replacing a battery or performing service near the battery, the sensor connector is easily left unplugged or damaged, setting this code immediately.
- P1493 can be stored intermittently by a poor ground connection at the battery or chassis, so verify ground straps and terminal cleanliness before condemning the sensor.

Can I keep driving with P1493?

You can generally continue driving with P1493 because the fault mainly affects charging system optimization and does not cause an immediate safety risk. Avoid long trips or heavy electrical loads until the issue is repaired, and address it promptly to prevent battery overcharging or undercharging over time.

Tools that help

- Digital multimeter
- Scan tool with live data capability
- Wire terminal pick and electrical contact cleaner
- Service information for GM battery temperature sensor resistance specifications

Reading P1493

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (GM): its meaning depends on the make.
4	Auxiliary emission controls.
93	The exact fault within that area.

Often seen with

P1637 Data Bus Powertrain Missing Message From Central Electronic · **P1494** EVAP Ventilation Switch Or Mechanical Fault · **P1637** CAN Link ECM ABS Control Module Circuit Network · **P1494** Leak Detection Pump Switch Or Mechanical Fault · **P1637** Alternator Warning Lamp Control Signal · **P1494** Leak Detection Pump Switch Or Mechanical Fault · **P1637** Throttle Valve Position Control Deviation · **P0562** System Voltage Low · **P0563** System Voltage High · **P0AFA** Hybrid/EV Battery System Voltage Low



See it working

Watch the animated explainer [Readiness Monitors and the OBD-II Drive Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1493/>

