

GENERIC · POWERTRAIN

P06AE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P06AE

Control Module Internal Temperature Sensor B Circuit High

P06AE indicates that the control module's internal temperature sensor B circuit is reporting a voltage higher than the manufacturer's expected range, which the module interprets as an excessively hot or open-circuit condition. The computer detects this when the sensor signal voltage stays above a calibrated threshold for a set period, often indicating a faulty sensor, wiring issue, or internal module fault.

SYSTEM Powertrain	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Professional	AREA Computer and output circuits
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Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other noticeable symptoms.
- Intermittent or complete loss of certain vehicle functions controlled by the affected module, such as transmission shifting or all-wheel-drive engagement.
- Reduced engine performance or limp-home mode if the module protects itself from overheating.
- Erratic operation of systems that rely on the module, such as dashboard warnings or accessory features.
- In rare cases, the module may shut down entirely, causing a no-start or stall condition.

Common causes, most likely first

- 1 Faulty internal temperature sensor B inside the control module, often due to age or heat exposure.
- 2 Open or high-resistance wiring between the sensor and the module's processing circuit.
- 3 Corroded or loose connector pins at the module harness, causing intermittent high voltage signals.
- 4 Internal circuit board damage or solder joint failure within the control module.
- 5 Extreme underhood or transmission temperatures exceeding the sensor's design limits, triggering a high reading.
- 6 Software calibration issues in the module that misinterpret sensor voltage under certain conditions.



How to diagnose and fix it

- 1 Use an OBD-II scan tool to retrieve the freeze-frame data and verify the sensor voltage reading matches the high-circuit condition.
- 2 Inspect the module harness and connectors for corrosion, loose pins, or chafed wires, and repair as needed.
- 3 Perform a voltage drop test on the sensor circuit to confirm whether the high voltage originates from the sensor or the wiring.
- 4 Check for technical service bulletins (TSBs) or software updates for the control module that address false temperature sensor codes.
- 5 If the sensor is serviceable separately, replace it; otherwise, replace or reprogram the control module as per manufacturer procedures.
- 6 Clear the code and perform a road test to confirm the repair, monitoring live data for the sensor voltage.

When the module itself is the culprit

- Many technicians replace the control module prematurely when the real fault is a corroded connector pin causing a high-voltage signal on the sensor circuit.
- A high voltage reading does not always mean the module is overheating; an open circuit in the sensor wiring can produce the same high signal voltage.
- On some vehicles, this code sets as a companion to other module communication codes, indicating a shared power or ground issue rather than a sensor failure.
- Extreme ambient temperatures or a missing underbody shield can cause temporary high readings that trigger the code without any failed component.
- Always check for updated module software before condemning hardware, as calibration updates often resolve false high-temperature codes.

Can I keep driving with P06AE?

If the vehicle drives normally, you can continue driving to a repair shop, but avoid heavy loads or sustained high speeds that could raise module temperatures further. If the module has entered limp mode or caused stalling, stop driving and seek professional diagnosis immediately.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for voltage and resistance checks
- Wiring diagram for the affected control module circuit
- Terminal pick and contact cleaner for connector inspection
- Manufacturer-specific diagnostic software for module reprogramming



Reading P06AE

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
6	Computer and output circuits.
AE	The exact fault within that area.

Often seen with

P0601 Internal Control Module Memory Checksum Error · **P0606** PCM Processor Fault · **P06AD** Control Module Internal Temperature Sensor B Circuit Low · **P06AF** Torque Management System Forced Engine Shutdown · **U0100** Lost Communication With ECM/PCM A

See it working

Watch the animated explainer [How a Boxer Engine Works: Flat Engine Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p06ae/>

