

GENERIC · POWERTRAIN

P06AC

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P06AC

Control Module Internal Temperature Sensor B Range/Performance

P06AC indicates that the control module's internal temperature sensor B circuit is reporting a voltage or signal that falls outside the expected range for the current operating conditions. The module compares this signal against its own internal thresholds and sets the code when the reading is implausible, erratic, or stuck, which can affect how the module manages its own thermal protection and overall performance.

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

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message with no other obvious drivability issues
- Intermittent electrical glitches such as flickering dashboard lights or random accessory malfunctions
- Reduced engine performance or limp-home mode if the module derates to protect itself from overheating
- Unexpected shutdown or failure of systems controlled by the affected module, especially in hot weather or after long drives
- Often no symptoms besides the warning light, particularly if the sensor fault is intermittent or only occurs under specific temperature conditions

Common causes, most likely first

- 1 Faulty internal temperature sensor B inside the control module, causing an open, short, or out-of-range signal
- 2 Corroded, loose, or damaged wiring and connectors between the sensor and the module's internal circuitry
- 3 Module software or calibration issue that misinterprets the temperature sensor signal under certain conditions
- 4 Extreme ambient temperatures or sustained high-load operation that push the sensor beyond its normal reporting range
- 5 Water intrusion or contamination inside the module housing affecting the sensor or its connections
- 6 A failing control module itself, where the internal sensor circuit or processing hardware degrades over time



How to diagnose and fix it

- 1 Use a scan tool to record freeze-frame data and verify the code is current, then check for any related module communication or voltage codes
- 2 Inspect the module's connectors and harness for corrosion, loose pins, or chafed wires, and perform a wiggle test while monitoring live temperature sensor data
- 3 Compare the internal temperature sensor B reading against ambient temperature and other temperature sensors to see if the value is plausible
- 4 Check for technical service bulletins or software updates for the module that address temperature sensor rationality or range faults
- 5 If the sensor is serviceable separately, test its resistance or voltage output against the manufacturer's specification and replace if out of range
- 6 If the sensor is internal and not serviceable, replace or reprogram the control module according to the manufacturer's procedure, then perform any required adaptation or coding
- 7 Clear the code and road-test the vehicle under varying temperature and load conditions to confirm the repair and ensure the code does not return

When the module temperature sensor lies

- A common misdiagnosis is replacing the control module immediately, but many P06AC cases are resolved by repairing corroded connector pins or a chafed wire that intermittently shorts the sensor signal.
- The code can set intermittently only during very hot or very cold ambient conditions, so a module that tests fine at room temperature may still be faulty under extreme operating temperatures.
- Some vehicles use the internal temperature sensor for thermal protection strategies, so a faulty reading can cause the module to derate performance or disable certain functions even when the engine runs normally.
- A weak or failing battery or charging system can cause module voltage fluctuations that mimic temperature sensor faults, so always verify battery and charging system health before condemning the module.
- P06AC is often stored alongside communication codes such as U0100 or U0140 when the module's internal fault affects its ability to communicate on the network.

Can I keep driving with P06AC?

The vehicle is generally safe to drive short distances to a repair shop, but avoid sustained high-load driving or extreme temperatures because the module may enter a protective limp mode without warning. If the engine or transmission behaves erratically, stop driving and have the vehicle towed to prevent further damage.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for checking resistance, voltage, and continuity
- Manufacturer-specific diagnostic software or reprogramming tool
- Wiring diagram and connector pinout for the affected module
- Infrared thermometer to compare module surface temperature with sensor readings

Reading P06AC

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.
AC	The exact fault within that area.

Often seen with

P0606 PCM Processor Fault · **P06AB** Control Module Internal Temperature Sensor B Circuit · **P06AD** Control Module Internal Temperature Sensor B Circuit Low · **U0100** Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p06ac/>

