



P06A8

Sensor Reference Voltage C Circuit Range/Performance

P06A8 means the engine computer has detected that the reference voltage supply for a sensor circuit, designated 'C', has moved outside its expected operating range or is not performing correctly. The computer monitors this voltage rail and sets the code when the signal is too high, too low, or unstable for a calibrated period, which can affect every sensor that shares that reference feed.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough running or hesitation if the affected reference voltage feeds sensors used for fuel and air control
- Incorrect or erratic readings on the dashboard temperature or pressure gauges
- Reduced fuel economy or poor throttle response
- Intermittent stalling or difficulty starting in more severe cases
- Other sensor-related trouble codes stored alongside P06A8

Common causes, most likely first

- 1 A short to ground or short to voltage on the reference voltage wire for circuit C
- 2 An open circuit or high resistance in the reference voltage wiring or a connector terminal
- 3 A faulty sensor that shares the reference voltage C circuit and is dragging the voltage down
- 4 Corroded, loose, or water-intruded electrical connectors in the engine harness
- 5 A failing engine control module (ECM) reference voltage output
- 6 Aftermarket accessories or poor previous repairs tapping into the reference voltage wire



How to diagnose and fix it

- 1 Scan all modules and record every stored and pending code to see which sensors share the affected reference circuit
- 2 Inspect the engine harness and connectors for chafing, corrosion, or loose pins, especially near the sensors on circuit C
- 3 Measure the reference voltage at each sensor connector with a digital multimeter and compare it to the manufacturer's specification
- 4 Disconnect sensors one at a time to see if the reference voltage returns to normal, isolating a faulty sensor
- 5 Perform a voltage drop test on the reference voltage wire and its ground return to locate high resistance
- 6 Repair or replace the damaged section of wiring or the faulty sensor, then clear codes and verify the reference voltage is stable
- 7 If the wiring and sensors are good, test the ECM output and replace the module only after confirming all other possibilities

What the reference voltage code really tells you

- P06A8 rarely points to a single sensor; the reference voltage C circuit typically feeds several sensors, so one bad sensor can pull the voltage down and set this code for all of them.
- A common misdiagnosis is replacing the sensor named in a related code when the actual fault is a rubbed-through wire or a corroded connector that intermittently shorts the reference voltage.
- The code can set intermittently from vibration or heat, so a wiggle test of the harness while watching live reference voltage data often reveals the problem when a static meter check looks normal.
- Aftermarket alarms, remote starters, or poorly installed accessories that tap into the reference voltage wire are a frequent hidden cause on older vehicles.
- Do not condemn the ECM until you have load-tested the reference voltage circuit and confirmed the module is not being pulled down by an external short.

Can I keep driving with P06A8?

You can usually drive the vehicle to a repair shop if it runs normally, but avoid heavy acceleration, towing, or long trips because a failing reference voltage can cause stalling or poor engine performance without warning. If the engine runs rough, stalls, or the check engine light flashes, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with back-probing pins
- Wiring diagram for the affected reference voltage circuit
- Test light or load tester
- Contact cleaner and dielectric grease
- Basic hand tools for connector and harness access



Reading P06A8

- 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.
- A8** The exact fault within that area.

Often seen with

P0641 Sensor Reference Voltage 'A' Circuit/Open · **P0651** Sensor Reference Voltage 'B' Circuit/Open · **P06A7** Sensor Reference Voltage B Circuit Range/Performance · **P06A9** Sensor Reference Voltage D Circuit Range/Performance · **P06AB** Control Module Internal Temperature Sensor B Circuit

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p06a8/>

