

GENERIC · POWERTRAIN

P2C07

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C07

A Camshaft Profile Actuator Position Sensor A Circuit Low Bank 1

P2C07 means the engine control module has detected a low-voltage signal on the circuit for the Bank 1 camshaft profile actuator position sensor, which reports how far the variable valve timing mechanism has moved. The computer expects a voltage within a calibrated range and sees the signal stuck below the minimum threshold, so it cannot trust the actuator's reported position.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- Rough idle or unstable engine speed at a stop
- Reduced engine power or a limp-home mode feeling during acceleration
- Poor fuel economy or sluggish throttle response
- Occasional engine misfire or hesitation under light load
- A noticeable change in valve train noise on some engines

Common causes, most likely first

- 1 Damaged, chafed, or corroded wiring in the sensor signal or reference voltage circuit
- 2 A failed camshaft profile actuator position sensor
- 3 A short to ground in the signal wire between the sensor and the engine control module
- 4 Loose or contaminated electrical connector pins at the sensor or module
- 5 A mechanically stuck or binding camshaft profile actuator that prevents the sensor from reading correctly
- 6 Low oil pressure or sludge blocking the actuator oil passages, indirectly affecting sensor feedback
- 7 A rare internal fault in the engine control module driver circuit



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the code is current and not history
- 2 Inspect the sensor connector and harness for corrosion, chafing, or pushed-out pins
- 3 Measure reference voltage and signal voltage at the sensor connector with the key on
- 4 Check the signal wire for continuity to ground and for a short to ground
- 5 Compare live sensor position data against commanded actuator position during a scan-tool actuation test
- 6 Replace the camshaft profile actuator position sensor if voltage checks prove the circuit is sound
- 7 Clear the code and verify the repair with a road test and a full readiness monitor check

What a low signal really tells you

- A low signal code often comes from a short to ground in the harness rather than a failed sensor, so resistance and voltage-drop tests matter more than parts swapping.
- Oil condition and pressure are frequently overlooked because a sludged profile actuator can hold the sensor in a position that produces a low reading even when the sensor itself is good.
- The code can set intermittently after a connector is disturbed during unrelated service, so check for recent work near the camshaft area before condemning components.
- A failed sensor on one bank does not automatically mean the opposite bank is healthy, and technicians who replace both without testing often mask a circuit problem.
- Some engines use a shared reference voltage with other sensors, so a low signal on this circuit can be caused by a fault in a completely different sensor on the same supply.

Can I keep driving with P2C07?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration and sustained high speeds because the engine may enter a reduced-power mode. If the check engine light begins flashing or the engine runs very rough, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data and actuation test capability
- Digital multimeter with back-probe pins
- Wiring diagram for the camshaft profile actuator circuit
- Basic hand tools for connector and sensor access
- Oil pressure gauge for checking actuator feed pressure



Reading P2C07

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 07** The exact fault within that area.

Often seen with

P0010 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P2C05** A Camshaft Profile Actuator Position Sensor A Circuit Bank 1 · **P2C08** A Camshaft Profile Actuator Position Sensor A Circuit High B

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c07/>

