



P2C0C

A Camshaft Profile Actuator Position Sensor B Circuit High Bank 1

P2C0C indicates that the powertrain control module has detected an abnormally high voltage on the signal circuit of the camshaft profile actuator position sensor B for bank 1. This sensor reports the actual position of the variable valve timing or cam profile actuator, and a high voltage reading usually means the signal circuit is shorted to power, the sensor ground is open, or the sensor itself has failed internally.

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 noticeable symptoms
- Rough idle or unstable engine operation when the cam profile system is commanded to change
- Reduced engine power or limp mode under certain driving conditions
- Poor fuel economy or increased emissions due to incorrect valve timing
- Intermittent hesitation or stumble during acceleration if the fault is intermittent
- A stored code P2C0C alone, with no drivability complaint in many cases

Common causes, most likely first

- 1 Faulty camshaft profile actuator position sensor B (internal short to power)
- 2 Short to voltage on the sensor signal circuit between the sensor and the PCM
- 3 Open or high-resistance ground circuit at the sensor connector
- 4 Damaged or corroded sensor connector pins causing intermittent high voltage
- 5 Failed variable valve timing solenoid or actuator causing the sensor to read out of range
- 6 PCM internal fault or corrupted calibration (rare, but possible after other causes are ruled out)



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data for P2C0C, then clear the code and verify whether it returns immediately or after a drive cycle
- 2 Visually inspect the sensor B connector and wiring harness for chafing, corrosion, or loose pins, and repair any damage found
- 3 Back-probe the sensor signal circuit at the sensor connector with the key on and engine off to check for a short to voltage; compare to the manufacturer's specification
- 4 Measure resistance of the sensor ground circuit from the sensor connector to the PCM ground pin to confirm it is below one ohm
- 5 If wiring and grounds are good, substitute a known-good sensor B and recheck live data to see if the high voltage reading corrects
- 6 Check the variable valve timing solenoid and actuator for mechanical binding or sludge that could force the sensor out of range, and clean or replace as needed
- 7 After repairs, clear codes and perform a road test with the scan tool monitoring camshaft profile position data to confirm the voltage stays within normal range

What a high voltage reading really tells you

- A high signal voltage does not automatically mean the sensor is bad; a short to power on the signal wire or a poor ground at the sensor can produce the same reading, so always check the ground circuit first.
- Many vehicles set P2C0C only after the PCM commands a cam profile change and sees the sensor voltage stay high, so the fault may not appear during a simple idle test.
- Oil sludge or debris in the variable valve timing actuator can mechanically restrict movement and cause the sensor to report an out-of-range high voltage, leading to unnecessary sensor replacement.
- Intermittent high voltage codes often trace to a harness rubbed through near the valve cover or a connector that wicks oil into the pins, which a static voltage check will miss.
- Some aftermarket sensors have different resistance curves than the original, so a new sensor can still set P2C0C if it is not the correct part for the application.

Can I keep driving with P2C0C?

You can usually drive the vehicle with P2C0C set, but avoid heavy acceleration or sustained high-speed driving until the fault is repaired, because incorrect cam profile timing can cause poor performance and increased emissions. If the engine runs rough or enters limp mode, have it diagnosed promptly.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and sensor access
- Known-good sensor for substitution testing

Reading P2C0C

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
C	Hybrid propulsion.
0C	The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0014** Exhaust Camshaft Position - Over-Advanced (Bank 1) · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P2C0B** A Camshaft Profile Actuator Position Sensor B Circuit Low Ba · **P2C0D** A Camshaft Profile Actuator Position Sensor C Circuit Bank 1

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/p2c0c/>

