

GENERIC · POWERTRAIN

P2C1D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C1D

B Camshaft Profile Actuator Position Sensor C Circuit High Bank 1

P2C1D means the powertrain control module (PCM) has detected a high-voltage condition on the signal circuit for the 'C' camshaft profile actuator position sensor on bank 1. The sensor reports the actual position of the camshaft profile actuator, and a high signal voltage tells the PCM the circuit is likely open, shorted to voltage, or the sensor reference is lost.

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 changes
- Reduced engine power or limp mode under certain driving conditions
- Poor fuel economy or increased emissions
- Intermittent hesitation or stumble during acceleration

Common causes, most likely first

- 1 Open or high-resistance signal wire between the sensor and the PCM
- 2 Signal circuit shorted to voltage or to the sensor reference wire
- 3 Failed camshaft profile actuator position sensor
- 4 Corroded, loose, or damaged sensor connector or pins
- 5 Faulty camshaft profile actuator solenoid causing the sensor to read out of range
- 6 PCM internal fault on the signal input circuit (rare)

How to diagnose and fix it

- 1 Inspect the sensor connector and wiring for corrosion, chafing, or loose pins
- 2 Measure reference voltage and ground at the sensor connector with the key on
- 3 Check the signal circuit voltage with a multimeter and compare to specification
- 4 Perform a wiggle test on the harness while monitoring the sensor signal on a scan tool
- 5 Replace the camshaft profile actuator position sensor if the circuit tests good but the signal stays high
- 6 Verify the camshaft profile actuator moves freely and the solenoid is not stuck
- 7 Clear the code and perform a road test to confirm the repair



What a high signal really tells you

- A high signal voltage often means the PCM is seeing an open circuit rather than a failed sensor, so always check continuity before replacing parts.
- The camshaft profile actuator position sensor shares a reference and ground with other sensors on many engines, so a fault in a shared circuit can set this code.
- A sticking camshaft profile actuator can cause the sensor to report a position outside its expected range, mimicking a sensor circuit high code.
- After repairs, some vehicles require a camshaft profile actuator relearn procedure before the code will stay cleared.
- This code can be set by a momentary voltage spike during engine cranking if the battery is weak, so check battery condition first.

Can I keep driving with P2C1D?

You can usually drive the vehicle with this code, but avoid aggressive acceleration and heavy loads until it is repaired. If the engine runs rough or enters limp mode, have it diagnosed promptly to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Back probe pins or breakout box
- Basic hand tools for connector and sensor access

Reading P2C1D

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
C	Hybrid propulsion.
1D	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) · **P2C1A** B Camshaft Profile Actuator Position Sensor C Circuit Bank 1 · **P2C1B** B Camshaft Profile Actuator Position Sensor C Range/Performa · **P2C1C** B Camshaft Profile Actuator Position Sensor C Circuit Low Ba



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/p2c1d/>

