

GENERIC · POWERTRAIN

P2C19

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C19

B Camshaft Profile Actuator Position Sensor B Circuit High Bank 1

P2C19 indicates that the powertrain control module has detected an abnormally high voltage on the signal circuit of the bank 1 B camshaft profile actuator position sensor, which monitors the variable valve timing or lift system. The computer expects the sensor to report a specific range of positions, and a sustained high voltage tells it the circuit is shorted to power, open, or the sensor has failed.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine power or a limp-home mode triggered by the control module.
- Rough idle or unstable engine operation due to incorrect camshaft profile positioning.
- Poor fuel economy or increased emissions as the variable valve timing system defaults to a fixed position.
- In rare cases, a no-start condition if the camshaft profile actuator is stuck in an unfavorable position.

Common causes, most likely first

- 1 Faulty camshaft profile actuator position sensor B on bank 1.
- 2 Short to voltage in the sensor signal circuit, often from chafed or damaged wiring.
- 3 Open circuit or high resistance in the sensor ground circuit.
- 4 Corroded or loose electrical connector at the sensor or powertrain control module.
- 5 Failed camshaft profile actuator solenoid or mechanical binding in the variable valve timing system.
- 6 Internal fault in the powertrain control module affecting the sensor reference voltage.



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, its connector, and the wiring harness for damage or corrosion.
- 2 Use a scan tool to check for other stored codes and freeze-frame data related to the camshaft profile system.
- 3 Measure the sensor reference voltage and ground with a digital multimeter to confirm the circuit integrity.
- 4 Back-probe the sensor signal wire and compare the voltage with the manufacturer's specification while moving the actuator through its range.
- 5 Test the camshaft profile actuator solenoid for proper resistance and operation, and inspect for mechanical binding.
- 6 If the sensor signal remains high with the connector disconnected, repair the short to voltage in the wiring harness.
- 7 Replace the camshaft profile actuator position sensor B if all circuit tests pass but the signal remains out of range, then clear codes and verify the repair.

Don't overlook the actuator solenoid

- A stuck or sluggish camshaft profile actuator solenoid can hold the camshaft in a position that makes the sensor report a high voltage, leading to misdiagnosis of the sensor itself.
- The sensor signal circuit can be shorted to voltage by a chafed wire near the exhaust manifold or other heat sources, which is often missed during a quick visual inspection.
- A poor ground connection at the sensor can cause the signal voltage to float high, mimicking a sensor failure, so always verify ground integrity before replacing parts.
- Some vehicles use a shared reference voltage for multiple sensors, and a fault in another sensor on the same circuit can pull the voltage high and set this code.
- After repairs, a relearn or adaptation procedure for the camshaft profile system may be required to prevent the code from returning.

Can I keep driving with P2C19?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or towing because the engine may enter limp mode and lack power. If the engine runs roughly or stalls, stop driving and have it towed to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Back-probe kit
- Wiring diagram for the specific vehicle
- Basic hand tools



Reading P2C19

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 19** 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) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P2C18** B Camshaft Profile Actuator Position Sensor B Circuit Low Ba · **P2C1A** B 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/p2c19/>

