

GENERIC · POWERTRAIN

P2B34

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B34

A Camshaft Profile Actuator B Control Circuit Low Bank 1

P2B34 indicates that the powertrain control module (PCM) has detected a low-voltage condition on the control circuit for the bank 1 camshaft profile actuator B, which is part of a variable valve timing or lift system. The PCM commands the actuator to change camshaft profile, but the circuit voltage stays below the expected threshold, so the system cannot verify that the actuator is responding correctly.

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.
- Rough idle or unstable engine operation, especially when cold.
- Reduced engine power or sluggish acceleration due to improper camshaft timing.
- Poor fuel economy or increased emissions.
- In rare cases, the engine may enter limp mode or stall.

Common causes, most likely first

- 1 Faulty camshaft profile actuator solenoid (open or shorted winding).
- 2 Damaged or corroded wiring or connector at the actuator or PCM.
- 3 Low battery voltage or poor ground connection affecting the circuit.
- 4 PCM internal driver failure (less common).
- 5 Contaminated or degraded engine oil causing actuator malfunction.
- 6 Mechanical binding in the camshaft phaser or profile mechanism.

How to diagnose and fix it

- 1 Verify battery voltage and condition; charge or replace if low.
- 2 Inspect the actuator connector and wiring for damage, corrosion, or loose pins.
- 3 Measure resistance of the actuator solenoid and compare to manufacturer specification.
- 4 Check for continuity and voltage drop on the control circuit between the PCM and actuator.
- 5 Test the actuator with a scan tool bidirectional control to confirm operation.
- 6 If the circuit and actuator test good, diagnose the PCM driver or mechanical phaser issue.
- 7 Clear codes and perform a road test to verify the repair.



Don't overlook oil condition and circuit integrity

- A low-voltage code for the camshaft profile actuator is often caused by a poor connection at the actuator connector rather than a failed actuator itself.
- Engine oil that is overdue for a change or contaminated can cause the actuator to stick, leading to a low-voltage code even when the electrical circuit is intact.
- The PCM may set this code if the actuator circuit is shorted to ground or if the actuator's internal resistance is out of specification, so resistance testing is critical.
- In some vehicles, a weak battery or charging system can cause intermittent low-voltage codes across multiple circuits, including this one.
- Replacing the actuator without checking the mechanical phaser for binding can lead to a repeat failure and the same code returning.

Can I keep driving with P2B34?

You can usually drive the vehicle with this code, but avoid aggressive acceleration or heavy loads because the camshaft profile may not be controlled correctly, which can affect performance and emissions. Have the fault diagnosed soon to prevent potential damage to the actuator or related components.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wiring diagram for the specific vehicle
- Socket set and basic hand tools

Reading P2B34

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
34	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 · **P0012** 'A' Camshaft Position - Timing Over-Retarded (Bank 1) · **P2B33** A Camshaft Profile Actuator B Control Circuit/Open Bank 1 · **P2B35** A Camshaft Profile Actuator B Control Circuit High 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/p2b34/>

