

GENERIC · POWERTRAIN

P001F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P001F

A Camshaft Profile Actuator A Control Circuit High Bank 2

P001F indicates that the powertrain control module has detected a high-voltage condition on the control circuit for the bank 2 camshaft profile actuator, which is the solenoid that moves the camshaft to change valve lift or duration. The circuit is commanding the actuator, but the voltage on the control wire is higher than expected, so the module sets this code and may disable the variable valve timing system.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or a limp-home mode because the cam profile system is disabled
- Rough idle or poor engine performance, especially at low speeds
- Decreased fuel economy due to the engine running with a fixed cam profile
- In some cases, a slight hesitation or stumble during acceleration

Common causes, most likely first

- 1 Faulty camshaft profile actuator solenoid with an internal short to voltage
- 2 Damaged or chafed wiring in the actuator control circuit, causing a short to power
- 3 Corroded or loose electrical connector at the actuator or PCM
- 4 Failed powertrain control module driver for the actuator circuit
- 5 Aftermarket or incorrect solenoid installed that does not match the vehicle specifications
- 6 Oil sludge or debris causing the actuator to draw abnormal current and affect circuit voltage



How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for any related camshaft position or actuator circuit codes
- 2 Inspect the actuator connector and wiring for damage, corrosion, or signs of shorting to voltage
- 3 Measure resistance across the actuator solenoid terminals and compare to the manufacturer's specification
- 4 With the key on and engine off, check for reference voltage on the control wire at the actuator connector
- 5 Disconnect the PCM and check the control circuit for a short to voltage using a multimeter
- 6 If the circuit tests good, replace the camshaft profile actuator solenoid with a quality OEM or equivalent part
- 7 Clear the code and perform a road test to confirm the repair and ensure the monitor runs to completion

What a high voltage code really means

- A high voltage code on an actuator control circuit often indicates a short to power rather than a failed actuator, so testing the wire for voltage with the actuator disconnected is critical before replacing parts.
- Some vehicles use a pulse-width modulated signal to control the actuator, and a high voltage code can be set if the PCM detects an unexpected voltage spike from a failing solenoid or a bad ground connection.
- A weak or corroded ground for the actuator or PCM can cause the control circuit to see higher than normal voltage, leading to this code even when the solenoid itself is good.
- Aftermarket solenoids with incorrect resistance can trigger this code because the PCM expects a specific current draw and interprets the mismatch as a circuit fault.
- This code does not always mean the actuator is defective; a shorted wire harness rubbing against a hot surface or moving component is a common cause that is often overlooked.

Can I keep driving with P001F?

You can usually drive the vehicle with this code, but the engine may enter a reduced power mode and fuel economy will suffer. Avoid heavy acceleration or towing until the fault is repaired, and have it diagnosed soon to prevent potential damage to the catalytic converter from running with incorrect cam timing.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and component access
- Test light or power probe



Reading P001F

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 1F** 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 · **P001E** A Camshaft Profile Actuator A Control Circuit Low Bank 2 · **P0020** 'A' Camshaft Position Actuator Circuit (Bank 2) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo

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/p001f/>

