

GENERIC · POWERTRAIN

P04B0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P04B0

Refueling Vapor Control Valve Circuit/Open

P04B0 indicates that the powertrain control module has detected an open circuit in the refueling vapor control valve circuit, meaning the valve's electrical path is broken or has excessive resistance. This valve is responsible for sealing the fuel tank vent during refueling to prevent vapor release, and an open circuit prevents the PCM from commanding it. The code sets when the PCM sees voltage outside the expected range on the valve control circuit.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other symptoms
- Fuel odor around the rear of the vehicle after refueling
- Difficulty refueling or premature fuel nozzle shutoff
- Slight fuel smell in the cabin when the tank is full
- Failed emissions inspection due to readiness monitors not completing

Common causes, most likely first

- 1 Broken or corroded wire in the refueling vapor control valve circuit
- 2 Failed refueling vapor control valve solenoid (open coil)
- 3 Loose or disconnected electrical connector at the valve
- 4 Blown fuse or poor ground connection for the valve circuit
- 5 PCM driver circuit fault (rare but possible)
- 6 Rodent damage to wiring harness near the fuel tank

How to diagnose and fix it

- 1 Inspect the valve connector and wiring for corrosion, looseness, or damage
- 2 Check the fuse and ground for the refueling vapor control valve circuit
- 3 Measure resistance across the valve solenoid and compare to manufacturer specification
- 4 Test for voltage and ground at the valve connector with the key on and during commanded activation
- 5 Repair or replace damaged wiring or connector terminals as needed
- 6 Replace the refueling vapor control valve if electrically open
- 7 Clear codes and verify the repair by running the appropriate monitor



What a P04B0 open circuit really means

- An open circuit can be caused by a disconnected connector that looks fully seated, so always perform a wiggle test while monitoring live data.
- The refueling vapor control valve is often mistaken for the purge valve, but they serve different functions and are located in different areas.
- A failed valve can cause refueling problems that mimic a blocked EVAP canister, so diagnose the electrical circuit before replacing mechanical parts.
- Some vehicles use a duty-cycle controlled valve, so a simple resistance check may not reveal an intermittent open circuit.
- The PCM may set P04B0 only after a specific drive cycle, so clearing the code without verifying the repair can lead to a comeback.

Can I keep driving with P04B0?

The vehicle is safe to drive under most conditions because the fault primarily affects refueling vapor control and emissions, not engine performance. Avoid topping off the fuel tank and refuel only to the automatic shutoff to reduce vapor release until the repair is completed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Service information for circuit specifications
- Basic hand tools for trim and connector access

Reading P04B0

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
B0	The exact fault within that area.

Often seen with

P0442 EVAP System Leak Detected (Small) · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak) · **P04B1** Refueling Vapor Control Valve Circuit Low · **P04B2** Refueling Vapor Control Valve Circuit High



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/p04b0/>

