

GENERIC · POWERTRAIN

P2BB3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2BB3

Fuel Pump Secondary Circuit Performance

P2BB3 indicates that the powertrain control module has detected a performance fault in the fuel pump secondary circuit, which typically supplies power or ground to the fuel pump control module or directly to the pump. The computer monitors voltage and current on this circuit and sets the code when the readings fall outside the expected range during commanded operation.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Engine cranks but fails to start or starts only after prolonged cranking
- Intermittent engine stall while driving or at idle
- Reduced engine power or hesitation under acceleration
- Fuel pump may not prime when the ignition is switched on
- Possible no-start condition with no fuel pressure at the rail

Common causes, most likely first

- 1 Faulty fuel pump control module or relay
- 2 Damaged or corroded wiring in the secondary fuel pump circuit
- 3 Poor electrical connection at the fuel pump or control module harness
- 4 Blown fuse or fusible link in the secondary circuit
- 5 Failed fuel pump motor drawing excessive current
- 6 Corroded ground connection for the fuel pump circuit
- 7 Open circuit in the secondary wiring between the control module and pump



How to diagnose and fix it

- 1 Check all fuses and relays related to the fuel pump secondary circuit and replace any that are blown or faulty
- 2 Inspect the wiring harness and connectors at the fuel pump control module and fuel pump for corrosion, chafing, or loose pins
- 3 Measure voltage and ground at the fuel pump connector while cranking to verify power and ground delivery
- 4 Perform a voltage drop test on the secondary circuit to identify excessive resistance in wiring or connections
- 5 Test the fuel pump control module with a scan tool bidirectional control to command the pump on and off
- 6 Measure fuel pump current draw with an ammeter to compare against manufacturer specifications
- 7 If all electrical checks pass, replace the fuel pump assembly or control module as indicated by test results

What the secondary circuit really controls

- The secondary circuit often refers to the ground side or a computer-controlled driver circuit, not just the main power feed, so a bad ground can set this code without any fuse blowing.
- A fuel pump control module that intermittently fails when hot can set P2BB3 without storing any other codes, making it a common misdiagnosis trap.
- Corrosion inside a connector that still looks clean from the outside can cause enough voltage drop to trigger this code, so always back-probe and load-test the circuit.
- This code does not always mean the fuel pump itself is failing; the pump may be healthy while the control module or wiring is at fault.
- Some vehicles use a pulse-width-modulated signal on the secondary circuit, and a failing driver in the control module can mimic a bad pump.

Can I keep driving with P2BB3?

If the engine starts and runs normally, you can drive cautiously to a repair shop, but avoid heavy acceleration and long trips because the fault may cause an unexpected stall. If the engine cranks without starting or stalls repeatedly, do not drive and have the vehicle towed to prevent a dangerous breakdown.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Fuel pressure gauge
- Ammeter or clamp-on current probe
- Test light
- Wiring diagram for the fuel pump circuit



Reading P2BB3

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- B3** The exact fault within that area.

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0089** Fuel Pressure Regulator 1 Performance · **P0230** Fuel Pump Primary Circuit Malfunction · **P0231** Fuel Pump Secondary Circuit Low · **P0232** Fuel Pump Secondary Circuit High

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2bb3/>

