

GENERIC · POWERTRAIN

P2C04

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C04

Fuel Pressure Regulator D Control Circuit High

P2C04 indicates that the powertrain control module has detected an abnormally high voltage on the control circuit for fuel pressure regulator D, which is one of several regulators used in advanced fuel systems. The computer commands a specific current or voltage to position the regulator, and a high-voltage reading on the return circuit tells the module the circuit is open, shorted to power, or the regulator itself 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
- Rough idle or stumbling acceleration due to incorrect fuel pressure
- Reduced engine power or limp mode as the computer limits operation to protect the fuel system
- Hard starting or extended cranking when the regulator cannot build proper pressure
- Poor fuel economy or rich-running exhaust smell from uncontrolled pressure

Common causes, most likely first

- 1 Open or damaged wire in the fuel pressure regulator control circuit
- 2 Short to voltage on the control circuit between the regulator and the control module
- 3 Failed fuel pressure regulator D solenoid or actuator
- 4 Corroded or loose electrical connector at the regulator or module
- 5 Internal driver failure inside the powertrain control module
- 6 High resistance in a ground circuit shared with the regulator

How to diagnose and fix it

- 1 Scan all modules for stored and pending codes and record freeze-frame data to confirm the fault conditions
- 2 Visually inspect the regulator connector and wiring harness for chafing, corrosion, or loose pins
- 3 Measure resistance of the regulator solenoid and compare to the manufacturer's specification
- 4 Backprobe the control circuit with a digital multimeter to check for voltage where it should not be present
- 5 Perform a voltage drop test on the ground circuit to rule out high resistance
- 6 If the circuit and regulator test good, substitute a known-good regulator or test the control module driver with a lab scope
- 7 Clear codes and verify the repair with a road test that includes several key cycles



What a high circuit code really means

- A high-voltage code on a control circuit often indicates an open circuit rather than a short, because the module pulls the circuit up and sees full voltage when the path to ground is broken.
- Technicians sometimes replace the fuel pressure regulator only to find the real fault is a corroded connector pin that was disturbed during replacement, temporarily clearing the code.
- This code can be set by a failing control module driver that is not delivering the commanded current, so the regulator may test perfectly good on the bench.
- A weak battery or charging system can cause erratic module behavior that sets this code without any actual circuit fault, so always check system voltage first.
- Fuel pressure regulator D is often part of a multi-regulator system, and a fault in one regulator can affect the entire fuel pressure strategy, leading to driveability complaints that seem unrelated.

Can I keep driving with P2C04?

You can usually drive the vehicle to a repair shop if the engine runs smoothly and the check engine light is steady, but avoid heavy acceleration or towing. If the engine runs rough, stalls, or the light flashes, stop driving and have the vehicle towed to prevent damage to the fuel system or catalytic converter.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Lab scope for waveform analysis
- Backprobe pins and jumper wires
- Factory service information for circuit specifications

Reading P2C04

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

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P2C01** Fuel Pressure Regulator D Performance · **P2C02** Fuel Pressure Regulator D Control Circuit/Open · **P2C03** Fuel Pressure Regulator D Control Circuit Low · **P2C05** A Camshaft Profile Actuator Position Sensor A Circuit Bank 1



See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c04/>

