

GENERIC · POWERTRAIN

P2121

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2121

Throttle/Pedal Position Sensor/Switch 'D' Circuit Range/Performance

P2121 indicates that the engine control module (ECM) has detected an out-of-range or performance fault in the throttle or pedal position sensor/switch 'D' circuit. The ECM compares the 'D' circuit signal against expected values and other correlated sensors, and it flags this code when the signal is not plausible or does not change as expected during key-on or driving.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine power or limp mode, limiting acceleration.
- Hesitation or stumble when pressing the accelerator pedal.
- Unresponsive or delayed throttle response.
- Rough idle or stalling, especially when coming to a stop.
- Inconsistent pedal feel or a pedal that requires extra effort to depress.

Common causes, most likely first

- 1 Faulty accelerator pedal position sensor 'D' or the entire pedal assembly.
- 2 Wiring damage (opens, shorts, or chafing) in the sensor 'D' circuit.
- 3 Corroded or loose electrical connectors at the pedal sensor or ECM.
- 4 Failed throttle body assembly with integrated position sensors.
- 5 ECM software issue or internal fault in the signal processing circuit.
- 6 Aftermarket electronic throttle controllers or poor previous repairs.



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurred.
- 2 Visually inspect the accelerator pedal sensor and its connector for corrosion, damage, or loose pins.
- 3 Perform a voltage drop test on the sensor 'D' signal, reference, and ground circuits to check for wiring integrity.
- 4 Use a scan tool to monitor live accelerator pedal position sensor voltages and compare them to the service manual specifications.
- 5 Check for technical service bulletins (TSBs) or software updates for the ECM that address this code.
- 6 If the sensor or wiring is faulty, replace the accelerator pedal assembly or repair the harness as needed.
- 7 Clear codes and perform a relearn or calibration procedure if required, then test-drive to verify the repair.

Common misdiagnosis traps for P2121

- A dirty or sticking throttle body can cause the ECM to set P2121 even when the pedal sensor is functioning correctly, so cleaning the throttle body should be part of the diagnostic routine.
The 'D' circuit often refers to a specific sensor track inside the accelerator pedal assembly; replacing the entire pedal assembly is common, but the wiring harness should be thoroughly tested first.
- In some vehicles, P2121 can be triggered by a weak battery or charging system issue that causes voltage spikes, so checking battery health and grounds is a wise preliminary step.
- Aftermarket floor mats or pedal covers that restrict pedal travel can cause the sensor to read out of range, leading to this code without any electrical fault.
This code may be accompanied by other throttle-related codes (such as P2135 or P2138), and diagnosing them together often reveals a shared connector or ground problem.

Can I keep driving with P2121?

If the vehicle is in limp mode or the throttle response is erratic, avoid driving until the fault is diagnosed and repaired. If the check engine light is on but the car drives normally, you can drive cautiously to a repair shop, but do not ignore the warning because the fault can worsen and cause sudden loss of power.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram and service manual for the specific vehicle
- Basic hand tools (screwdrivers, socket set)
- Contact cleaner and dielectric grease



Reading P2121

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 21** The exact fault within that area.

Often seen with

P2120 Throttle/Pedal Position Sensor/Switch 'D' Circuit · **P2122** Accelerator Pedal Position Sensor D Circuit Low · **P2123** Accelerator Pedal Position Sensor D Circuit High · **P2135** Throttle/Pedal Position Sensor A/B Voltage Correlation · **P2138** Throttle/Pedal Position Sensor D/E Voltage Correlation

See it working

Watch the animated explainer [How a Turbocharger Works, Step by Step](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2121/>

