

GENERIC · POWERTRAIN

**P210F**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P210F

### Throttle Actuator B Control System - Forced Limited RPM

P210F indicates that the engine control module has commanded a forced limited RPM mode because it detected a fault in the throttle actuator B control system, which typically controls the second throttle plate in an electronic throttle body. The computer sets this code when the actuator circuit or its position feedback does not match the commanded throttle angle, triggering a protective strategy that limits engine speed to prevent unintended acceleration.

SYSTEM

**Powertrain**

CODE TYPE

**Generic (all makes)**

SEVERITY

**High**

FIX DIFFICULTY

**Intermediate**

AREA

**Fuel and air metering**

### Symptoms you may notice

- The engine may enter limp mode, limiting RPM to a preset value (often around 1,500–2,500 RPM) regardless of accelerator pedal position.
- The check engine light illuminates, and a message such as 'Engine Power Reduced' may appear on the dashboard.
- Acceleration becomes sluggish or non-responsive, and the vehicle may hesitate or stumble when the throttle is applied.
- In some cases, the engine may idle erratically or stall when coming to a stop.
- Often no symptoms besides the warning light, especially if the fault is intermittent and the forced limited RPM mode is not actively engaged.

### Common causes, most likely first

- 1 A dirty or carbon-fouled throttle body, causing the actuator to bind or the plate to stick, which is the most common cause on high-mileage vehicles.
- 2 Wiring damage (chafed, corroded, or broken wires) in the throttle actuator B circuit, including the motor control and position sensor wiring.
- 3 A failing throttle actuator motor or internal position sensor within the electronic throttle body assembly.
- 4 A weak or failing battery or charging system, leading to low voltage that disrupts actuator operation and sets the code.
- 5 Corroded or loose electrical connectors at the throttle body or engine control module.
- 6 A software calibration issue in the engine control module that misinterprets actuator feedback, sometimes resolved by a reflash.
- 7 Rarely, a faulty engine control module driver circuit for the throttle actuator.



## How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to see the conditions when P210F set.
- 2 Inspect the throttle body for carbon buildup and clean it with throttle body cleaner and a soft brush, then perform a throttle relearn procedure.
- 3 Check the battery voltage and charging system output; a low battery can cause false throttle actuator codes, so load-test the battery and alternator.
- 4 Visually inspect the throttle actuator B wiring and connectors for damage, corrosion, or loose pins, and wiggle-test the harness while monitoring live data.
- 5 Use a scan tool to command the throttle actuator through its range while watching position sensor feedback for smooth, consistent movement; a binding or erratic signal points to a failing throttle body.
- 6 Measure resistance and voltage on the actuator motor and position sensor circuits according to the manufacturer's specifications to isolate a wiring or component fault.
- 7 If the throttle body is confirmed faulty, replace it with a quality unit and perform the required adaptation or relearn procedure with a capable scan tool.

## What most technicians overlook with P210F

- A dirty throttle body is the most frequent culprit, but many shops replace the entire unit before attempting a thorough cleaning and relearn, which often resolves the code at a fraction of the cost.
- Low system voltage from a weak battery can set P210F without any actual throttle body fault, so always verify battery and charging system health before condemning the actuator.
- The forced limited RPM mode may not engage immediately; the code can be stored as pending or history without the driver noticing reduced power, leading to misdiagnosis of a intermittent wiring issue.
- After replacing or cleaning the throttle body, a throttle position relearn or adaptation is mandatory on most vehicles; skipping this step will cause the code to return even with a perfectly functioning part.
- P210F can be triggered by a failing accelerator pedal position sensor on some drive-by-wire systems, because the computer cross-checks pedal and throttle positions and may set actuator codes when the pedal signal is erratic.

## Can I keep driving with P210F?

Driving with P210F is not recommended because the vehicle may enter forced limited RPM mode without warning, reducing power and increasing the risk of a collision in traffic. If you must drive to a repair shop, keep speed low, avoid highways, and be prepared for sudden loss of acceleration.



## Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter
- Throttle body cleaner and soft brush
- Socket set and screwdrivers
- Battery load tester
- Wiring diagram and manufacturer service information

## Reading P210F

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>2</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>1</b>  | Fuel and air metering.                                               |
| <b>0F</b> | The exact fault within that area.                                    |

## Often seen with

**P0121** Throttle Position Sensor A Circuit Range/Performance · **P0221** Throttle Position Sensor B Circuit Range/Performance · **P210E** Throttle/Pedal Position Sensor/Switch C/F Voltage Correlation · **P2110** Throttle Actuator Control System - Forced Limited RPM · **P2135** Throttle/Pedal Position Sensor A/B Voltage Correlation

## See it working

Watch the animated explainer [How a Manual Transmission Works: Four-Speed Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p210f/>

