

GENERIC · POWERTRAIN

P05B2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P05B2

# Active Grille Air Shutter B Control Circuit Range/Performance

P05B2 indicates that the powertrain control module (PCM) has detected an out-of-range or performance fault in the control circuit for active grille air shutter 'B', which is typically the second shutter assembly on vehicles with dual active grille systems. The PCM monitors the shutter motor's electrical feedback and expected movement, and it sets this code when the circuit's voltage or current does not match the commanded position within the calibrated limits.

|            |                     |          |                |                                                  |
|------------|---------------------|----------|----------------|--------------------------------------------------|
| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                                             |
| Powertrain | Generic (all makes) | Low      | Intermediate   | Vehicle speed, idle control and auxiliary inputs |

## Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- The active grille shutter may remain stuck open or closed, affecting fuel economy and engine warm-up time.
- A faint clicking or buzzing noise from the front grille area when the vehicle is started or shut off.
- In some cases, the shutter may cycle repeatedly or move erratically during driving.
- Reduced fuel efficiency, especially in cold weather, due to improper aerodynamics or extended warm-up.

## Common causes, most likely first

- 1 A binding or obstructed shutter assembly caused by debris, ice, or impact damage.
- 2 A faulty shutter actuator motor with worn brushes or internal electrical failure.
- 3 Damaged or corroded wiring and connectors in the shutter control circuit, often from road splash or salt.
- 4 A failed position sensor within the shutter assembly that provides incorrect feedback to the PCM.
- 5 A PCM software issue or internal driver fault in the shutter control circuit (less common).
- 6 A blown fuse or relay that supplies power to the active grille shutter system.



## How to diagnose and fix it

- 1 Inspect the shutter assembly for physical obstructions, debris, or ice and clear any blockages manually.
- 2 Check the shutter for free movement by hand (with the vehicle off) to confirm it is not mechanically binding.
- 3 Perform a visual inspection of the wiring harness and connectors at the shutter and PCM for corrosion, chafing, or loose pins.
- 4 Use a scan tool to command the shutter open and closed while monitoring live data for commanded versus actual position to isolate an electrical or mechanical fault.
- 5 Test the actuator motor and position sensor with a multimeter for resistance and voltage signals according to the manufacturer's specifications.
- 6 If the actuator or sensor is faulty, replace the affected shutter assembly or motor as a unit, following the service procedure.
- 7 After repair, clear the diagnostic trouble codes (DTCs) and perform a relearn or calibration procedure if required by the vehicle manufacturer.

## Grille Shutter Faults You Might Overlook

- A common oversight is assuming the shutter motor is defective when the real problem is a bent or misaligned shutter frame that causes binding only at certain temperatures.
- The PCM may set P05B2 even when the shutter moves freely if the position sensor's feedback voltage is skewed, so live data comparison is essential before parts replacement.
- On some vehicles, the active grille shutter shares a power circuit with other body components, and a blown fuse for an unrelated system can disable the shutters and set this code.
- After replacing a shutter assembly, many technicians forget to perform a calibration or relearn procedure, leading to a repeat code even with a new part.
- This code can be set by a low battery or charging system issue that causes the shutter motor to stall during its self-test, so check battery health first.

## Can I keep driving with P05B2?

The vehicle remains safe to drive because the active grille shutter is an emissions and efficiency device, not a safety system. Avoid ignoring the light for long periods, as a stuck shutter can reduce fuel economy and may cause overheating in extreme conditions if stuck closed.

## Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter
- Trim removal tools
- Service information for the specific vehicle



## Reading P05B2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- B2** The exact fault within that area.

## Often seen with

**P05A0** Active Grille Air Shutter A Stuck On · **P05B0** Active Grille Air Shutter B Position Sensor Minimum/Maximum · **P05B1** Active Grille Air Shutter B Control Circuit/Open · **P05B3** Active Grille Air Shutter B Control Circuit High · **P05B4** Active Grille Air Shutter B Control Circuit Low

## See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p05b2/>

