



## P05B1

# Active Grille Air Shutter B Control Circuit/Open

P05B1 is a generic powertrain code indicating that the powertrain control module (PCM) has detected an open circuit or control fault in the 'B' active grille air shutter circuit. The PCM commands the shutter motor to move, but the feedback signal does not match the expected position or current draw, so it flags the circuit as open.

| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                                             |
|------------|---------------------|----------|----------------|--------------------------------------------------|
| Powertrain | Generic (all makes) | Medium   | 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 shutters may remain stuck in the open or closed position, affecting fuel economy and engine warm-up time.
- A noticeable decrease in fuel efficiency, especially during highway driving, if the shutters fail to close at speed.
- Longer engine warm-up periods in cold weather if the shutters stay open and allow excessive airflow over the radiator.
- Possible overheating or higher coolant temperatures if the shutters remain closed during demanding driving conditions.
- Some vehicles may display a message in the driver information center indicating a grille shutter fault or reduced engine performance.

## Common causes, most likely first

- 1 A broken, disconnected, or corroded wire in the active grille shutter 'B' control circuit.
- 2 A failed active grille shutter actuator motor or its internal position sensor.
- 3 Physical damage to the shutter assembly, such as a broken linkage or jammed vanes, causing the motor to stall and set an open circuit code.
- 4 A faulty powertrain control module (PCM) driver for the shutter circuit, though this is less common.
- 5 Water intrusion or debris in the shutter connector, leading to high resistance or an open circuit.
- 6 Aftermarket or incorrect replacement shutter components that do not match the vehicle's original specifications.



## How to diagnose and fix it

- 1 Inspect the active grille shutter assembly for physical damage, debris, or jammed vanes, and clear any obstructions.
- 2 Disconnect the shutter actuator connector and check for corrosion, water intrusion, or loose pins; clean and repair as needed.
- 3 Use a digital multimeter to check for continuity and resistance in the 'B' control circuit between the PCM and the actuator, repairing any open or shorted wiring.
- 4 Command the shutter motor with a scan tool to verify operation and observe live data for commanded versus actual position; if the motor does not respond, test the motor directly with fused power and ground.
- 5 If the motor fails to operate with direct power, replace the active grille shutter actuator or the complete shutter assembly as required.
- 6 After repairs, clear the diagnostic trouble codes (DTCs) and perform a relearn or calibration procedure for the active grille shutter system if supported by the scan tool.
- 7 Road test the vehicle and verify that the shutter operates through its full range and that the code does not return.

## What most technicians overlook on P05B1

- A common cause of P05B1 that is often missed is a mechanical binding in the shutter linkage that prevents full travel, causing the motor to draw excessive current and the PCM to interpret it as an open circuit.
- The code can be set intermittently by water intrusion into the shutter connector after a car wash or heavy rain, so always check for moisture and corrosion even if the connector looks clean.
- Some vehicles require a scan tool to perform a shutter calibration after any repair; skipping this step can cause the code to reset immediately even with good components.
- P05B1 does not always mean the shutter motor is faulty; a poor ground connection at the shutter assembly or a damaged wire harness from road debris can produce the same code.
- On vehicles with active grille shutters, a failing battery or low voltage during engine start can cause a false open circuit code, so verify battery health before replacing parts.

## Can I keep driving with P05B1?

You can generally continue driving with P05B1, but avoid sustained high-speed driving or heavy towing if the shutters are stuck closed, as this may lead to higher engine temperatures. Have the fault diagnosed soon to prevent potential overheating or reduced fuel economy.



## Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter
- Test light
- Fused jumper wires
- Socket and wrench set
- Trim removal tools

## Reading P05B1

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>0</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>5</b>  | Vehicle speed, idle control and auxiliary inputs.                    |
| <b>B1</b> | The exact fault within that area.                                    |

## Often seen with

**P05A0** Active Grille Air Shutter A Stuck On · **P05A1** Active Grille Air Shutter A Position Sensor Minimum/Maximum · **P05B0** Active Grille Air Shutter B Position Sensor Minimum/Maximum · **P05B2** Active Grille Air Shutter B Control Circuit Range/Performanc · **P05B3** Active Grille Air Shutter B Control Circuit High

## See it working

Watch the animated explainer [How an EGR Valve Works: Exhaust Gas Recirculation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p05b1/>

