

GENERIC · POWERTRAIN

P05AD

OBD-II TROUBLE CODE

P05AD

Active Grille Air Shutter B Position Sensor Circuit Intermittent

P05AD indicates that the powertrain control module (PCM) has detected an intermittent fault in the position sensor circuit for the active grille air shutter labeled 'B'. The active grille shutter system automatically opens and closes front-end louvers to improve aerodynamics and fuel economy, and the PCM expects a stable position signal from this sensor whenever it commands the shutter to move or hold a position.

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 shutter may remain stuck in the open or closed position, affecting fuel economy or engine cooling.
- A faint clicking or buzzing noise from the front grille area as the shutter motor attempts to move the louvers.
- In some vehicles, a message on the driver information center indicating a grille shutter fault or reduced engine performance.
- Potential overheating in hot weather or during heavy load if the shutter fails to open when required.
- Poor fuel economy due to the shutter not closing at highway speeds when aerodynamic drag reduction is needed.

Common causes, most likely first

- 1 A faulty or contaminated position sensor integrated into the active grille shutter actuator.
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, often near the front bumper where exposure to elements is high.
- 3 Loose or corroded electrical connectors at the shutter actuator or PCM.
- 4 Mechanical binding or obstruction of the grille shutter louvers, causing the sensor to report erratic positions.
- 5 A failing shutter actuator motor that intermittently fails to move or hold position, affecting sensor feedback.
- 6 Software issues or internal faults in the PCM affecting the interpretation of the sensor signal.
- 7 Aftermarket front-end modifications (e.g., grille guards, bumpers) that interfere with shutter operation.



How to diagnose and fix it

- 1 Inspect the active grille shutter assembly for physical damage, debris, or obstruction and verify free movement of the louvers.
- 2 Check the wiring harness and connectors at the shutter actuator for chafing, corrosion, or loose pins; repair as needed.
- 3 Use a scan tool to command the shutter through its full range and observe the position sensor data for consistency and intermittent dropouts.
- 4 Perform a voltage drop test on the sensor reference and ground circuits to rule out high resistance.
- 5 If the sensor is integrated with the actuator, compare live sensor readings with the commanded position to identify a faulty actuator/sensor assembly.
- 6 Replace the active grille shutter actuator/sensor assembly if diagnostics confirm an internal fault.
- 7 Clear the diagnostic trouble codes (DTCs) and perform a relearn or calibration procedure as required by the manufacturer.

Intermittent Grille Shutter Faults Often Misdiagnosed

- A common oversight is replacing the entire active grille shutter assembly when the root cause is a chafed wire near the front bumper that only shorts intermittently while driving over bumps.
- The position sensor is often integrated into the shutter actuator, so a faulty sensor may require replacing the whole actuator unit rather than a separate sensor.
- Intermittent faults can be caused by water intrusion into the connector, leading to corrosion that only affects the signal under certain weather conditions.
- Some vehicles require a calibration or relearn procedure after any shutter service; skipping this step can cause the code to reset even after a correct repair.
- The PCM may set P05AD if the shutter is obstructed by snow, ice, or debris, so always check for mechanical binding before condemning electrical components.

Can I keep driving with P05AD?

You can generally continue driving with this code, but avoid heavy loads or high ambient temperatures if the shutter may be stuck closed, as this could lead to engine overheating. Have the system inspected soon to prevent potential cooling or fuel economy issues.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter (DMM) for circuit testing
- Trim removal tools for accessing the grille shutter assembly
- Service information for the specific vehicle (wiring diagrams, calibration procedures)
- Basic hand tools (sockets, wrenches, screwdrivers)



Reading P05AD

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.
AD	The exact fault within that area.

Often seen with

P05A8 Active Grille Air Shutter A Supply Voltage Circuit High · **P05A9** Active Grille Air Shutter B Position Sensor Circuit · **P05AA** Active Grille Air Shutter B Position Sensor Circuit Range/Pe · **P05AB** Active Grille Air Shutter B Position Sensor Circuit High · **P05AC** Active Grille Air Shutter B Position Sensor Circuit Low

See it working

Watch the animated explainer [How Drive-by-Wire Works: Electronic Throttle Body](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p05ad/>

