

GENERIC · POWERTRAIN

P05AA

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P05AA

Active Grille Air Shutter B Position Sensor Circuit Range/Performance

P05AA indicates that the powertrain control module has detected an out-of-range or erratic signal from the position sensor for active grille air shutter bank B. The computer expects the shutter position voltage to fall within a calibrated range as the shutter moves through its commanded travel, and it has seen the signal stay too high, too low, or change too quickly for too long.

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.
- Aerodynamic shutter may remain stuck open, reducing fuel economy at highway speeds.
- Shutter may remain closed, causing higher engine coolant temperatures in hot weather or during heavy load.
- A noticeable decrease in fuel efficiency, especially during highway driving.
- Possible overheating warning or elevated temperature gauge reading if the shutter stays closed.
- In some vehicles, a message on the driver information center about grille shutter service required.

Common causes, most likely first

- 1 Debris, ice, or snow accumulation physically blocking the shutter movement.
- 2 Damaged or disconnected wiring harness or connector at the shutter actuator or sensor.
- 3 Faulty active grille shutter position sensor integrated into the shutter assembly.
- 4 Failed shutter actuator motor or binding shutter linkage.
- 5 Corrosion or water intrusion in the sensor or actuator connector.
- 6 Software calibration issue in the powertrain control module requiring reflash.
- 7 Rarely, a failed powertrain control module driver circuit for the shutter.



How to diagnose and fix it

- 1 Inspect the grille shutter area for debris, ice, or physical damage and clear any obstruction.
- 2 Check the shutter for free movement by hand and verify it is not binding or broken.
- 3 Inspect the electrical connector and wiring at the shutter actuator and sensor for corrosion, chafing, or loose pins.
- 4 Use a scan tool to command the shutter through its full range and observe the position sensor voltage for smooth operation.
- 5 Perform a voltage drop test on the sensor reference and ground circuits to rule out wiring resistance.
- 6 If the sensor signal is erratic or out of range during commanded movement, replace the shutter assembly or sensor as applicable.
- 7 After repair, clear the code and perform a relearn or calibration procedure as required by the manufacturer.

Grille shutter faults that mimic sensor failure

- A common misdiagnosis is replacing the shutter assembly when the real problem is a corroded connector or a rodent-chewed wire that intermittently shorts the sensor signal.
- The shutter may pass a static position check but fail only when the vehicle is moving, because air pressure or vibration affects the linkage; a road test with live data is often necessary.
- Extreme cold weather can cause ice to jam the shutter, setting this code even though the hardware is undamaged; the code may clear after thawing and a recalibration.
- Some vehicles require a grille shutter initialization after any battery disconnect or actuator replacement, and skipping this step will immediately reset the code.
- A failing thermostat or coolant temperature sensor can cause the PCM to command the shutter to an unexpected position, indirectly setting a shutter position code without any shutter fault.

Can I keep driving with P05AA?

You can generally continue driving with this code, but avoid sustained high-speed driving or heavy towing if the shutter is stuck closed, as engine temperatures may rise. Monitor the coolant temperature gauge and 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 for circuit testing
- Trim removal tools for accessing the grille shutter assembly
- Flashlight and inspection mirror for visual checks
- Manufacturer service information for calibration procedures



Reading P05AA

- 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.
- AA** The exact fault within that area.

Often seen with

P00B4 Radiator Coolant Temperature Sensor Circuit High · **P05A9** Active Grille Air Shutter B Position Sensor Circuit · **P05AB** Active Grille Air Shutter B Position Sensor Circuit High · **P05AC** Active Grille Air Shutter B Position Sensor Circuit Low · **P05AD** Active Grille Air Shutter B Position Sensor Circuit Intermit

See it working

Watch the animated explainer [Readiness Monitors and the OBD-II Drive Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p05aa/>

