



P0A3F

Drive Motor A Position Sensor Circuit

P0A3F indicates that the hybrid or electric vehicle control module has detected an implausible signal from the position sensor circuit of drive motor A, which is typically the main traction motor. The computer compares the sensor's reported rotor position against expected values from other sensors and sets this code when the signal is missing, erratic, or out of range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon light
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Reduced power or limp mode, limiting vehicle speed and acceleration
- Rough running or shuddering during acceleration or regenerative braking
- Failure of the engine to start or the vehicle to move from a stop
- Unusual noises from the motor or transmission area during operation

Common causes, most likely first

- 1 Faulty motor position sensor (resolver) internal failure
- 2 Damaged or corroded wiring harness or connector at the motor position sensor
- 3 Open or short circuit in the sensor signal or reference voltage circuit
- 4 Failed hybrid control module or inverter assembly not processing the sensor signal correctly
- 5 Mechanical damage to the sensor reluctor wheel or rotor
- 6 Loose or improperly seated sensor mounting causing air gap issues
- 7 Electrical interference from aftermarket accessories or poor grounding



How to diagnose and fix it

- 1 Perform a visual inspection of the motor position sensor connector and wiring for damage, corrosion, or loose pins
- 2 Check for technical service bulletins (TSBs) or software updates for the hybrid control module that address position sensor faults
- 3 Use a scan tool to monitor live data from the motor position sensor and compare it with other motor sensors for consistency
- 4 Measure resistance and voltage on the sensor circuits according to the manufacturer's specifications to identify open or short circuits
- 5 Inspect the sensor mounting and air gap, and check for mechanical damage to the reluctor wheel
- 6 Replace the motor position sensor if electrical tests confirm it is faulty
- 7 If the sensor and wiring are good, diagnose the hybrid control module or inverter for internal faults

What Most Techs Miss on P0A3F

- A weak or failing 12-volt auxiliary battery can cause erratic sensor signals and set this code, so always load-test the battery before condemning the motor sensor.
- The motor position sensor is often integrated into the motor assembly, and replacing it may require significant disassembly; confirm the fault is truly the sensor before starting major repairs.
- Intermittent codes can be caused by a poor ground connection at the motor or chassis, which is frequently overlooked during diagnosis.
- Aftermarket electrical accessories or improper jump-starting can introduce voltage spikes that damage the sensor circuit, so check for recent electrical work.
- The code may be set by a faulty inverter coolant pump causing overheating and signal dropout, so verify cooling system operation on hybrid models.

Can I keep driving with P0A3F?

If the vehicle enters limp mode or shows reduced power, avoid driving at high speeds or under heavy load and seek service immediately. Continuing to drive with this code can lead to complete loss of propulsion, so it is safest to have the vehicle towed to a repair facility.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope for waveform analysis
- Manufacturer-specific diagnostic software
- Basic hand tools for connector and sensor access



Reading P0A3F

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- 3F** The exact fault within that area.

Often seen with

P0A40 Drive Motor A Position Sensor Circuit Range/Performance · **P0A41** Drive Motor A Position Sensor Circuit Low · **P0A42** Drive Motor A Position Sensor Circuit High · **P0A43** Drive Motor A Position Sensor Circuit Intermittent · **P0A44** Drive Motor A Position Sensor Circuit Overspeed

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0a3f/>

