

GENERIC · POWERTRAIN

P0A2B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A2B

Drive Motor A Temperature Sensor A Circuit Range/Performance

P0A2B indicates that the hybrid or electric vehicle's control module has detected an abnormal range or performance issue with the temperature sensor circuit for Drive Motor A, which is the primary traction motor. The computer compares the sensor's signal against expected values and flags this code when the reading falls outside a plausible range or does not change as expected during operation.

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

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms.
- Reduced power output or a limp-home mode as the vehicle limits motor operation to prevent overheating.
- The hybrid system may shut down completely, preventing the vehicle from starting or moving.
- Inconsistent temperature readings on a scan tool that do not match actual motor temperature.
- Possible overheating of the drive motor if the sensor under-reports temperature, leading to damage over time.

Common causes, most likely first

- 1 Faulty temperature sensor internal to the drive motor, causing an open or short circuit.
- 2 Damaged or corroded wiring harness or connector between the sensor and the control module.
- 3 Poor electrical connection at the sensor or control module pins, leading to intermittent signals.
- 4 Failed control module that misinterprets the sensor signal or has an internal fault.
- 5 Cooling system issues, such as low coolant or a failed pump, causing actual overheating that triggers the sensor range fault.
- 6 Aftermarket or incorrect sensor installed previously, leading to incompatible resistance values.



How to diagnose and fix it

- 1 Use an OBD-II scan tool to retrieve the freeze-frame data and check for related codes in other modules.
- 2 Visually inspect the sensor wiring and connector for damage, corrosion, or loose pins, and repair as needed.
- 3 Measure the resistance of the temperature sensor with a multimeter and compare it to the manufacturer's specification for the current temperature.
- 4 Back-probe the sensor signal circuit at the control module to verify the voltage or resistance matches the sensor output.
- 5 Check the motor cooling system for proper operation, including coolant level and pump function, to rule out actual overheating.
- 6 If the sensor is faulty, replace it according to the manufacturer's procedure, which may require motor disassembly.
- 7 Clear the codes and perform a road test to verify the repair, ensuring the sensor reading changes smoothly with temperature.

Common Misdiagnosis Traps for P0A2B

- A loose or corroded connector at the motor temperature sensor is frequently the root cause, yet many technicians replace the sensor or control module without checking the connector first.
- The code can be set by a cooling system fault that causes the motor to overheat, so always verify actual motor temperature with an infrared thermometer before condemning the sensor.
- In some vehicles, the drive motor temperature sensor is part of the motor assembly and cannot be replaced separately, leading to unnecessary motor replacement if the wiring is not thoroughly tested.
- Intermittent faults may not appear during a static test; a wiggle test of the harness while monitoring sensor data on a scan tool can reveal a bad connection.
- This code may be accompanied by other temperature sensor codes for the inverter or battery, indicating a shared power or ground issue rather than individual sensor failures.

Can I keep driving with P0A2B?

It is not advisable to continue driving with this code, as the vehicle may enter a reduced power mode or shut down unexpectedly, and prolonged driving could lead to motor overheating and costly damage. Have the vehicle diagnosed and repaired promptly, and avoid heavy loads or high-speed driving until fixed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and harness inspection



Reading P0A2B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- 2B** The exact fault within that area.

Often seen with

P0A2A Drive Motor A Temperature Sensor A Circuit · **P0A2C** Drive Motor A Temperature Sensor A Circuit Low · **P0A2D** Drive Motor A Temperature Sensor A Circuit High · **P0A3F** Drive Motor A Position Sensor Circuit · **P0A78** Drive Motor A Inverter Performance

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/p0a2b/>

