

GENERIC · POWERTRAIN

P0A2D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A2D

Drive Motor A Temperature Sensor A Circuit High

P0A2D indicates that the hybrid or electric vehicle control module has detected an abnormally high voltage on the signal circuit of the temperature sensor that monitors drive motor A, which is often the main traction motor. The sensor's output is outside the expected range, so the module cannot reliably determine the motor's temperature and may limit power or disable hybrid operation to prevent overheating.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	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 engine power or a forced limp mode that limits vehicle speed
- The hybrid system may shut down completely, preventing the vehicle from moving under electric power
- Inconsistent or inaccurate temperature readings on a scan tool, sometimes showing implausible values
- In rare cases, the cooling fan may run continuously or the motor may overheat if the sensor falsely reports a low temperature

Common causes, most likely first

- 1 A faulty drive motor temperature sensor that has drifted or failed internally
- 2 Damaged or corroded wiring in the sensor signal circuit, including opens, chafing, or pin fit issues
- 3 A poor electrical connection at the sensor or at the control module connector
- 4 High resistance in the sensor ground circuit, causing the signal voltage to rise
- 5 A short to voltage on the signal circuit from another wire or component
- 6 A failed hybrid or electric vehicle control module, though this is less common



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then verify the motor temperature reading against actual conditions
- 2 Visually inspect the sensor and its wiring for obvious damage, corrosion, or loose connectors, and repair as needed
- 3 Measure the sensor's resistance with a multimeter and compare it to the manufacturer's specification for the current temperature
- 4 Backprobe the signal circuit at the control module connector to check for an open or high-resistance condition while wiggling the harness
- 5 Check for a short to voltage on the signal circuit by measuring voltage with the sensor disconnected and the key on
- 6 If the wiring and sensor test good, substitute a known-good sensor or simulate the signal to confirm the control module responds correctly
- 7 Replace the faulty sensor or repair the wiring, clear the codes, and verify the temperature reading returns to normal during a road test

What a high motor temp code really means

- A high signal voltage does not always mean the motor is hot; it often indicates an open circuit or a disconnected sensor, because the control module pulls the signal line up to a reference voltage.
- Technicians sometimes replace the motor temperature sensor only to find the real problem is a corroded connector pin or a chafed wire in the harness near the motor, so always perform a voltage drop test on both the signal and ground circuits.
- On some vehicles, the drive motor temperature sensor is integrated into the motor stator or a combined sensor assembly, making replacement more involved and requiring removal of the motor or inverter.
- A weak or failing 12-volt auxiliary battery can cause erratic sensor readings and set this code, so check battery health and charging system operation before condemning the sensor.
- This code can be set by a short to voltage on the signal circuit from a nearby wire, such as one for the motor resolver or inverter, so inspect the entire harness routing for damage.

Can I keep driving with P0A2D?

Do not continue driving with this code if the vehicle has entered limp mode or if the hybrid system has shut down, as you may lose power unexpectedly. Even if the vehicle seems to drive normally, avoid long trips and schedule a diagnosis promptly because an inaccurate temperature reading can lead to motor overheating and costly damage.



Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter
- Backprobe pins or breakout box
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools

Reading P0A2D

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A2C** Drive Motor A Temperature Sensor A Circuit Low · **P0A2E** Drive Motor A Temperature Sensor A Circuit Intermittent · **P0A2F** Drive Motor A Over Temperature · **P0A3F** Drive Motor A Position Sensor Circuit

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/p0a2d/>

