

GENERIC · POWERTRAIN

P0A2C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A2C

Drive Motor A Temperature Sensor A Circuit Low

P0A2C indicates that the hybrid or electric vehicle control module has detected an abnormally low voltage signal from the temperature sensor that monitors drive motor A, which is the primary traction motor. The sensor circuit is reporting a value below the expected range, suggesting a short to ground, an open circuit, or a faulty sensor, and the controller may limit motor output to protect the hardware.

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 or a limp-home mode as the controller derates the drive motor to prevent overheating damage.
- The vehicle may refuse to enter ready mode or may shut down unexpectedly while driving.
- A message on the dashboard indicating a hybrid system fault or service required.
- In rare cases, the motor may feel sluggish or unresponsive during acceleration.

Common causes, most likely first

- 1 A faulty drive motor temperature sensor that has failed internally and is reading low.
- 2 Damaged wiring or a poor connection at the sensor connector, such as corrosion or a backed-out pin.
- 3 A short to ground in the sensor signal circuit, often caused by chafed insulation against a metal component.
- 4 An open circuit in the sensor reference or ground circuit, which can mimic a low signal.
- 5 A malfunctioning hybrid control module that is misinterpreting the sensor signal, though this is less common.
- 6 Contamination or debris on the sensor tip that alters its resistance reading.
- 7 Extreme environmental conditions, such as excessive moisture intrusion into the connector, causing a temporary low reading.



How to diagnose and fix it

- 1 Connect a scan tool and verify the P0A2C code is current, then check for any related codes in the hybrid control module.
- 2 Inspect the drive motor temperature sensor connector and wiring for corrosion, damage, 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 ambient temperature.
- 4 Check the sensor signal circuit for a short to ground by disconnecting the sensor and testing continuity between the signal wire and chassis ground.
- 5 If the wiring and connector are intact, replace the drive motor temperature sensor, which may require removing the motor assembly on some vehicles.
- 6 After repair, clear the diagnostic trouble codes and perform a road test to confirm the sensor reads correctly and the code does not return.
- 7 If the code persists after sensor replacement, diagnose the hybrid control module and its programming, as a faulty module may be the root cause.

When the sensor is not the culprit

- A low signal code often results from a short to ground in the wiring harness, especially where it routes near hot or moving components, so a thorough visual inspection of the harness is essential before condemning the sensor.
- The drive motor temperature sensor is sometimes integrated into the motor assembly and not available separately, which can turn a simple sensor replacement into a major repair; always check parts availability first.
- Intermittent low readings can be caused by moisture ingress into the connector, so a resistance test performed when the connector is dry may pass, and a water spray test can help reproduce the fault.
- The hybrid control module may set this code if the sensor circuit is open, not just shorted low, because an open circuit can pull the signal voltage below the expected range.
- A weak or failing 12-volt auxiliary battery can cause erratic sensor readings and set this code, so always verify battery condition and charging system operation before diving into the hybrid system.

Can I keep driving with P0A2C?

It is generally safe to drive the vehicle short distances to a repair shop, but avoid heavy acceleration or long trips because the controller may limit power and the motor could overheat if the sensor is truly faulty. If the vehicle enters limp mode or shows a hybrid system warning, have it towed to prevent further damage.



Tools that help

- OBD-II scan tool with hybrid system capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Insulation resistance tester (megohmmeter)

Reading P0A2C

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A2A** Drive Motor A Temperature Sensor A Circuit · **P0A2B** Drive Motor A Temperature Sensor A Circuit Range/Performance · **P0A2D** Drive Motor A Temperature Sensor A Circuit High · **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/p0a2c/>

