

GENERIC · POWERTRAIN

P0C53

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C53

Drive Motor A Position Sensor Circuit A Circuit High

P0C53 indicates that the hybrid or electric vehicle control module has detected an abnormally high voltage on the signal circuit from the 'A' position sensor of drive motor 'A'. This sensor reports the rotor position to the motor controller, and a high signal voltage tells the module that the circuit is shorted to power or that the sensor's internal resistance has shifted out of range.

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

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- Often no symptoms besides the warning light, with the vehicle continuing to drive normally
- Reduced power or a limp-home mode that limits motor output
- The vehicle may refuse to start or shift into gear if the fault is active at key-on
- Intermittent stalling or sudden loss of propulsion while driving
- A stored freeze-frame showing the fault occurred at a specific motor speed or temperature

Common causes, most likely first

- 1 A short to voltage on the sensor signal wire, often from chafed insulation against a 5-volt reference or battery feed
- 2 An open or high-resistance ground connection at the sensor or motor housing
- 3 A failed motor position sensor internally shorted, producing a high signal voltage
- 4 Corroded or pushed-back terminals in the sensor connector or at the control module
- 5 Damage to the resolver or sensor wiring harness from heat, vibration, or debris
- 6 A faulty motor control module incorrectly reading or biasing the signal circuit
- 7 Water intrusion into the sensor connector or motor housing causing a conductive path



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes plus freeze-frame data before clearing anything
- 2 Inspect the sensor connector and harness for corrosion, chafing, or pushed-back pins, and repair as needed
- 3 Measure signal circuit voltage with the key on and sensor connected, comparing it to the manufacturer's expected range
- 4 Disconnect the sensor and check for a short to voltage on the signal wire with a multimeter or test light
- 5 Check the sensor ground circuit for excessive resistance and verify the reference voltage at the sensor
- 6 If wiring and grounds are good, substitute a known-good sensor or perform a resistance check on the sensor itself
- 7 After repair, clear codes and run a road test or relearn procedure to confirm the signal tracks correctly across the full motor speed range

What a high signal voltage really tells you

- A high signal voltage does not automatically mean the sensor has failed; a short to voltage on the signal wire from a nearby power feed will set the same code and is far cheaper to fix.
- Technicians often replace the motor position sensor only to find the fault returns because the connector terminals were spread or corroded, so always perform a terminal drag test before condemning the sensor.
- On many hybrid systems, the motor position sensor shares a ground with other sensors, and a single bad ground can produce a high signal reading on this circuit while other codes are also stored.
- The code can set intermittently from vibration or heat, so a wiggle test of the harness while watching live sensor data is more reliable than a static resistance check.
- Some vehicles will set P0C53 when the 12-volt battery is weak or the charging system is unstable, because the control module misreads the sensor signal during low-voltage conditions.

Can I keep driving with P0C53?

You can usually drive the vehicle short distances to a repair shop if the warning light is on and the car feels normal, but avoid heavy acceleration or long trips because an active fault can suddenly drop the vehicle into limp mode. If the vehicle has already lost power or refuses to start, do not drive it and have it towed.

Tools that help

- OBD-II scan tool with live data and hybrid system capability
- Digital multimeter with min/max recording
- Back probe pins or breakout box for connector testing
- Wiring diagram for the specific vehicle
- Terminal drag test tool or a known-good mating pin



Reading P0C53

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

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A40** Drive Motor A Position Sensor Circuit Range/Performance
 · **P0C54** Drive Motor A Position Sensor Circuit A Circuit Intermittent · **P0C55** Drive Motor B Position Sensor Circuit A Circuit
 · **P0C56** Drive Motor B Position Sensor Circuit A Range/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/p0c53/>

