

GENERIC · POWERTRAIN

P0C52

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C52

Drive Motor A Position Sensor Circuit A Circuit Low

P0C52 indicates that the powertrain control module has detected an abnormally low voltage signal from the position sensor circuit of drive motor A, which is the primary traction motor in many hybrid and electric vehicles. The sensor reports the motor's rotational position to the controller, and a low signal means the circuit is likely shorted to ground or the sensor output has failed.

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 service vehicle soon message
- Reduced power or limp mode, as the controller cannot reliably determine motor position
- Hesitation or shuddering during acceleration from a stop
- Possible failure to start or engage drive, depending on the vehicle's safety strategy
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Damaged or chafed wiring in the sensor circuit, causing a short to ground
- 2 Failed motor position sensor (resolver or encoder) internal to the drive motor
- 3 Corroded or loose electrical connector at the sensor or controller
- 4 Faulty powertrain control module or inverter internal circuit
- 5 Moisture intrusion into the sensor or connector
- 6 Aftermarket accessories or improper previous repairs disturbing the harness



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then clear codes and test-drive to see if P0C52 returns
- 2 Visually inspect the motor position sensor harness and connectors for damage, corrosion, or loose pins
- 3 Measure resistance and voltage on the sensor signal circuit according to the manufacturer's specification, checking for a short to ground
- 4 Perform a wiggle test on the harness while monitoring sensor data to catch intermittent faults
- 5 If the circuit tests good, remove and inspect the sensor for contamination or mechanical damage
- 6 Replace the motor position sensor if faulty, then clear codes and verify the repair with a test drive
- 7 If the sensor and wiring are intact, diagnose the controller or inverter as the remaining suspect

When the sensor is not the culprit

- A low signal code often results from a short to ground in the harness where it rubs against a bracket or passes through a grommet, so inspect the entire run before condemning the sensor.
Intermittent P0C52 can be caused by a failing connector pin tension that only acts up under vibration or temperature changes, which a simple static resistance test will miss.
- Some vehicles set this code when the 12-volt auxiliary battery is weak or charging system voltage is low, because the sensor reference voltage drops below the expected threshold.
- After a collision repair or motor replacement, a misrouted or pinched harness is a common cause that technicians overlook when focusing on the sensor itself.
The code does not always mean the sensor has failed; a faulty controller ground or a poor chassis ground can pull the entire sensor circuit low.

Can I keep driving with P0C52?

Do not continue driving with this code active, because the vehicle may enter limp mode or lose propulsion without warning, creating a safety risk. Have the vehicle towed to a qualified repair facility for diagnosis.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Back probe kit
- Insulation resistance tester (megohmmeter)



Reading P0C52

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

Often seen with

P0C53 Drive Motor A Position Sensor Circuit A Circuit High · **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 · **P0C57** Drive Motor B Position Sensor Circuit A Circuit Low

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/p0c52/>

