



P0CDE

Drive Motor A Position Sensor Circuit C Circuit Intermittent/Erratic

P0CDE indicates that the powertrain control module (PCM) has detected an intermittent or erratic signal from the 'C' circuit of the position sensor for drive motor 'A', which is the primary traction motor in a hybrid or electric vehicle. The PCM monitors this circuit to determine the motor's rotor position for proper commutation and torque control, and it sets the code when the signal momentarily drops out, spikes, or becomes inconsistent with other sensor inputs.

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 service vehicle soon message, often with no other noticeable symptoms
- Intermittent loss of power or hesitation during acceleration, especially under load
- Rough running or shuddering from the drive motor, sometimes felt as a vibration through the chassis
- The vehicle may enter a reduced-power limp mode or fail to start in some cases
- Unusual noises from the motor or inverter area, such as whining or clicking, during acceleration or deceleration

Common causes, most likely first

- 1 A loose, corroded, or damaged connector at the drive motor position sensor or the PCM, causing an intermittent electrical connection
- 2 Chafed, pinched, or broken wires in the sensor circuit 'C' harness, often due to vibration or routing near hot or moving components
- 3 A failing drive motor position sensor (internal fault) that produces erratic signals as it heats up or vibrates
- 4 Poor ground connection for the sensor or PCM, leading to voltage fluctuations that mimic a sensor fault
- 5 Electrical interference from nearby high-voltage cables or ignition components coupling into the sensor wiring
- 6 A faulty PCM or inverter control module, though this is less common and should be diagnosed last



How to diagnose and fix it

- 1 Inspect the drive motor position sensor connector and PCM connector for loose pins, corrosion, or water intrusion, and clean or repair as needed
- 2 Perform a wiggle test on the sensor harness while monitoring live data to reproduce the intermittent signal and locate the damaged section
- 3 Check the sensor circuit 'C' wiring for continuity, shorts to ground, and shorts to voltage using a multimeter, and repair any damaged wires
- 4 Verify the sensor ground circuit has low resistance to the chassis ground, and clean or tighten ground connections if necessary
- 5 Replace the drive motor position sensor if the wiring and connectors are verified good but the signal remains erratic
- 6 If the sensor is replaced, clear the codes and perform a relearn or calibration procedure as required by the manufacturer
- 7 As a last resort, diagnose or replace the PCM or inverter control module only after all other causes have been ruled out

Intermittent Sensor Codes That Fool Mechanics

- A common oversight is replacing the drive motor position sensor without first checking the harness routing near the motor mount or exhaust, where vibration often chafes the insulation and causes intermittent shorts.
- The code can be set by a weak 12-volt battery or charging system issue, because low system voltage can cause the PCM to misinterpret sensor signals as erratic.
- Technicians sometimes misdiagnose this as a failing motor or inverter, but the position sensor circuit 'C' is often a separate low-voltage circuit that can be tested independently with a scope.
- Aftermarket accessories or poor audio installations can introduce electrical noise into the sensor circuit, so check for non-factory wiring near the motor harness.
- The PCM may set P0CDE only under specific driving conditions, such as during regenerative braking or when the motor is hot, so a road test with a scan tool recording live data is essential.

Can I keep driving with P0CDE?

You can usually continue driving to a repair shop if the vehicle is not in limp mode, but avoid aggressive acceleration or heavy loads because an erratic position signal can cause sudden power loss or rough operation. If the vehicle enters reduced-power mode or stalls, pull over safely and have it towed.



Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter with min/max recording
- Oscilloscope for signal analysis
- Wiring diagram and connector pinout for the specific vehicle
- Insulation piercing probes or back-probe kit

Reading P0CDE

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

Often seen with

P0CDB Drive Motor A Position Sensor Circuit C Range/Performance · **P0CDC** Drive Motor A Position Sensor Circuit C Circuit Low · **P0CDD** Drive Motor A Position Sensor Circuit C Circuit High · **P0CDF** Hybrid/EV Battery Pack Coolant Control Valve A Control Circuit Low · **P0CE0** Hybrid/EV Battery Pack Coolant Control Valve A Performance/S

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/p0cde/>

