



P2E1C

Drive Motor A Phase X Current Sensor Circuit Range/Performance

P2E1C indicates that the computer has detected an out-of-range or erratic signal from the current sensor for one phase of the traction motor's three-phase inverter circuit. The sensor's voltage or current reading does not match expected values for the motor's operating conditions, which can affect hybrid or electric vehicle propulsion.

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, limiting vehicle speed
- Hesitation or shudder during acceleration
- Inability to start or engage the drive gear
- Often no symptoms besides the warning light

Common causes, most likely first

- 1 Faulty phase current sensor
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Poor electrical connection at the motor inverter
- 4 Internal failure in the motor control module or inverter
- 5 Software calibration issue in the motor control system
- 6 Mechanical damage to the motor or inverter causing abnormal current signals

How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for related fault codes in the motor control system
- 2 Inspect the phase current sensor wiring and connectors for damage, corrosion, or loose pins
- 3 Measure the sensor's reference voltage and signal output with a multimeter and compare to specifications
- 4 Perform a wiggle test on the wiring harness while monitoring sensor data to detect intermittent faults
- 5 Check for technical service bulletins or software updates for the motor control module
- 6 If the sensor is faulty, replace it and clear the code, then test-drive the vehicle to confirm the repair
- 7 If the sensor and wiring are good, diagnose the inverter or motor control module for internal faults



Phase current sensor faults often misdiagnosed

- A loose or corroded connector at the phase current sensor is a frequent cause that can mimic a failed sensor, so always inspect connectors before replacing parts.
- The code may set intermittently due to vibration or heat, and a simple wiggle test of the harness can reveal the issue without expensive tools.
- Some vehicles require a software update to the motor control module to correct current sensor calibration, which is often overlooked.
- A failing inverter can send abnormal signals to the current sensor, so replacing the sensor alone may not fix the problem if the inverter is damaged.
- This code is specific to hybrid and electric vehicles, and generic OBD-II scanners may not access the necessary motor control data, requiring a manufacturer-specific scan tool.

Can I keep driving with P2E1C?

Driving with this code is not recommended because it can lead to reduced power or a sudden loss of propulsion, increasing the risk of an accident. Avoid highway driving and seek service immediately if the vehicle enters limp mode.

Tools that help

- Manufacturer-specific scan tool
- Digital multimeter
- Oscilloscope
- Wiring diagram
- Basic hand tools

Reading P2E1C

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
1C	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 · **P0A78** Drive Motor A Inverter Performance · **P2E1D** Drive Motor A Phase X Current Sensor Circuit Low · **P2E1E** Drive Motor A Phase X Current Sensor Circuit High



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/p2e1c/>

