

GENERIC · POWERTRAIN

P2E22

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E22

Drive Motor A Phase Y Current Sensor Circuit High

P2E22 indicates that the inverter or motor control module has detected an abnormally high voltage on the current-sensor signal circuit for phase Y of drive motor A, which is the traction motor that propels the vehicle. The sensor itself may be faulty, but the code is set when the circuit voltage exceeds the expected range, so the module cannot trust the phase current reading and may limit motor output.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or a dedicated hybrid/EV service warning lamp
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Reduced power or a limp-home mode that limits vehicle speed
- The vehicle may refuse to start or shift into drive if the fault is active at key-on
- In rare cases, a shudder or hesitation during acceleration if the current reading is erratic

Common causes, most likely first

- 1 A damaged or chafed wire in the phase Y current-sensor signal circuit, often from vibration or heat
- 2 A poor electrical connection at the current sensor or at the motor control module connector
- 3 A failed current sensor internal to the drive motor or inverter assembly
- 4 Contamination or corrosion in the sensor connector causing high resistance
- 5 A faulty motor control module or inverter that misreads the sensor signal
- 6 A short to voltage on the signal circuit from an adjacent harness
- 7 A loose or corroded ground connection shared by the sensor and module



How to diagnose and fix it

- 1 Use a scan tool to record the freeze-frame data and verify the code is current, then clear it and test-drive to see if it returns
- 2 Visually inspect the phase Y current-sensor harness and connector for chafing, corrosion, or loose pins
- 3 Measure the sensor signal voltage with a multimeter and compare it to the manufacturer's specification at key-on and during a gentle drive
- 4 Perform a wiggle test on the harness while watching live sensor data to catch intermittent faults
- 5 Check the sensor ground circuit for excessive resistance and repair any bad ground
- 6 If the circuit and connector are good, swap the current sensor with a known-good unit if accessible, or follow the manufacturer's test procedure for the sensor
- 7 If the sensor tests good, diagnose the motor control module and inverter for internal faults before replacing any high-voltage component

What the phase Y current sensor really does

- This code is often set by a loose connector pin or a chafed wire rather than a failed sensor, so a thorough circuit check before parts replacement saves significant cost.
- A high voltage on the signal circuit can be caused by a short to a 5-volt reference or battery voltage from an adjacent wire in the same harness, which is easy to miss if you only check for opens.
- The current sensor is sometimes integrated into the motor or inverter assembly, making replacement a high-voltage service procedure that requires proper safety training and insulated tools.
- Intermittent P2E22 codes that appear only under certain driving conditions often point to a harness routing issue that flexes with suspension movement or engine torque.
- Do not assume the motor itself is failing; the code specifically flags the sensor circuit, and a healthy motor can set this code if the sensor signal is corrupted.

Can I keep driving with P2E22?

If the vehicle drives normally and the warning light is steady, you can drive cautiously to a repair shop, but avoid hard acceleration or long trips. If the vehicle enters limp mode or refuses to start, stop driving and have it towed to avoid further damage to the hybrid system.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with min/max recording
- Insulated hand tools rated for hybrid high-voltage work
- Wiring diagram and connector pinout for the specific vehicle
- Back-probe kit for testing connectors without damage



Reading P2E22

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

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A45** Drive Motor B Position Sensor Circuit · **P2E20** Drive Motor A Phase Y Current Sensor Circuit Range/Performan · **P2E21** Drive Motor A Phase Y Current Sensor Circuit Low · **P2E23** Drive Motor A Phase Z Current 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/p2e22/>

